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Research paper

Clinical supervision and ward orientation predict new graduate nurses' intention to work in critical care: Findings from a prospective observational study

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ABSTRACT

Introduction: Clinical supervision and transitional support programs are important in supporting the successful transition and retention of new graduate nurses and their intention to work in specialty settings. However, little is known about which elements of support programs influence this intention. This study aimed to examine new graduate nurses' perceptions of clinical supervision and the practice environment, and how these influenced their intention to stay in critical and non-critical care areas following their transitional support program.

Methods: Between May 2012 and August 2013, new graduate nurses ($n = 87$) were surveyed towards the end of their 12-month transitional support program. In addition to demographic and ward details, participants completed the Manchester Clinical Supervision Scale (MCSS) and the Practice Environment Scale Australia (PES-AUS). The 'Intention to Stay in a Clinical Specialty' survey was used to measure new graduate nurses' intention to remain working in their current ward or unit.

Results: Predictors of new graduate nurses' intention to stay in their current ward/unit were not having to practise beyond personal clinical capability (AOR: 4.215, 95% CI: 1.099−16.167) and working in a critical care specialty (AOR: 6.530, 95% CI: 1.911-22.314). Further analysis of those nurses who indicated an intention to remain in critical care revealed that high satisfaction with clinical supervision (AOR: 3.861, 95% CI: 1.320−11.293) and high satisfaction with unit orientation (AOR: 3.629, 95% CI: 1.236 −10.659) were significant predictors.

Conclusion: While this study identified that new graduates who worked within their scope of practice were more likely to report their intention to remain in their current ward, new graduates assigned to critical care were six times more likely to indicate their intention to remain than new graduates in other wards/units. Ensuring new graduate nurses assigned to critical care areas receive good unit orientation and clinical supervision increases their intention to remain in this setting.

1. Introduction

Internationally, new graduate nurses' (NGNs) intention to stay in nursing continues to be an ongoing concern, particularly in light of the predicted nursing shortage and potential negative impact on patient care.[1,2] In the United States of America (USA), the Bureau of

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Labour Statistics[3] predicts a shortage of more than 525,000 nurses by 2022. Similar figures have been reported for other developed countries; in the United Kingdom (UK), the nursing workforce between 2011 and 2016 was expected to decrease from 560,000–570,000 to 510,000–560,000, whereas in Australia, a deficit of 110,000 nurses by 2025 has been identified.[4] Recent modelling has revised these figures, and unless recruitment and retention strategies are put in place, the shortfall is predicted to increase.[5]

While these shortages are partly due to 'baby boomer' nurses approaching retirement,[6] attrition of NGNs—registered nurses within their first year of practice—is also a contributory factor. The term 'new graduate nurses' is commonly used in the literature[7–9] alongside 'newly licensed nurses'[10] 'novice nurses'[11] or 'newcomer nurses'[12] to identify this cohort of nurses. Studies indicate that between 18%[13] to 60%[14] of NGNs leave their positions within the first year of practice.

Many NGNs have selected clinical specialty settings such as intensive care units, emergency departments, and coronary care units as their first preference, with studies of final year nursing students indicating that more than half are interested in seeking employment in these areas.[15] While these settings are seen as challenging and exciting areas to work,[16] they are also seen as areas where professional development opportunities are good.[15] However, despite nursing shortages in these specialty areas[17] and NGNs comprising the largest pool of available nurses in the job market,[18] the capacity of these settings to provide rotations during an NGN's first year of practice is limited. Critical care settings are commonly unfamiliar and demanding environments, requiring NGNs to face for the first time the reality and complexity of caring for high acuity patients as registered nurses and, at the same time, grappling with the transition into the nursing workforce. These challenges alongside a shorter patient length of stay,[19] technological developments,[20] and high performance expectations have led to ongoing difficulties in role transition for new nurses in general,[21] resulting in increased burnout and turnover.[22] In an integrative review of the elements needed to support transition of nurses to critical care, Innes and Calleja[23] identified that a structured orientation period and feeling supported were correlated with the intention to stay.

NGNs are often required to rotate between departments—including specialty areas during the first year of transition—[7,24] and are sometimes placed in departments where there is a staffing shortfall or were asked to work beyond their clinical capability, with potential impact on patient safety and quality care. They have also reported to be working in high acuity environments with high performance expectations.[25] These expectations are often amplified when NGNs transition into a critical care environment.[26] This is often not conducive to their transition experience; hence, identifying elements of clinical supervision and environmental factors that influence NGNs' intention to stay is important to inform strategies that help retain and support NGNs in specialty areas such as critical care.

Given the increasing and unmet nursing workforce needs, particularly in these specialties,[17] it is timely and relevant to investigate the effectiveness of support programs that aim to retain NGNs in these clinical specialties.

2. Aim

This study aimed to examine NGNs' perceptions of clinical supervision (CS) and the practice environment and how these influenced their intention to stay in critical and noncritical care areas.

3. Methods

3.1. Study design

This article reports the follow-up findings from a larger pre-test and post-test research study designed to evaluate the effectiveness of a clinical supervision program for NGNs working in an acute care setting[24] using the conceptual model of 'supervision continuum for nurses and midwives'.[27] This model proposes that clinical supervision of nurses and midwives consist of point-of-care supervision (e.g. clinical teaching and buddying), facilitated professional development (e.g. coaching and mentoring scenario), and formalised clinical supervision. In this article, we reported the results of the follow-up phase (posttest) of the study, which occurred between 10 and 12 months after the commencement of the clinical supervision program.

3.2. Study setting and participants

The present study was conducted between May 2012 and August 2013 at a tertiary-level teaching hospital in Sydney, Australia. The facility has 855 beds and employs more than 1500 nursing staff across a number of speciality areas. As part of this clinical supervision program, NGNs undertook a 12-month transitional support program (TSP), which has previously been described.[24] For the purpose of this article, the TSP comprised of two rotations across two wards/units. NGNs rotated across two clinical specialties for a period of six months. Orientation days were given as supernumerary on the wards/unit and ranged from two days in general ward areas (medical-surgical wards, neurology, vascular, aged care, haematology, renal, and gastroenterology) and 10 days in critical care areas (emergency department, intensive care unit including cardiothoracics, anaesthetics, recovery, acute coronary care, cardiac catheterisation laboratory and neonatal intensive care unit). During this period, NGNs were 'buddied up' with a trained preceptor or clinical nurse educator (i.e. NGNs were supernumerary) and attended programmed education sessions covering essential clinical skills relevant to the specialty area.

3.3. Data collection

NGNs employed at the acute care setting were invited to participate in this study during facility orientation whereby potential participants were fully briefed regarding the purpose of the study and were provided a Participant Information Sheet. As this study involved a follow-up phase, NGNs who agreed to participate in the study were asked to sign a consent form and assigned a study identification code to link the baseline survey to the follow-up survey. Although the baseline survey data were collected 8–10 weeks after the commencement of the TSP, the follow-up survey was collected 10–12 months thereafter, the focus of this article. Ethics approval was granted by the Western Sydney University (WSU) and SouthWestern Sydney Local Health District Human Research Ethics Committees (H10055, LNR/11/LPOOL/510). Both written and verbal information about the study was provided to all participants.

3.4. Instruments

Participant characteristics assessed in this study included age and gender, while a single-item Likert scale measure (0 = never, 5 = sometimes, 10 = always) was used to assess how frequently NGNs were placed in a clinical situation where they felt the expectations of the clinical workload were beyond their personal

clinical capability and where they did not feel confident enough about managing the clinical situation at hand given their level of skill or expertise. In addition, three practice environment factors known to influence NGNs' intention to stay in a clinical specialty were included:[24]: (i) the type of ward (critical care or noncritical care area); (ii) the level of satisfaction with unit-based orientation; and (iii) satisfaction with the clinical supervision. These were measured using a Likert scale (0 = extremely dissatisfied; 10 = extremely satisfied).

The 26-item Manchester Clinical Supervision Scale© (MCSS-26) is a standardised measure used to assess nurses' satisfaction with and experiences of clinical supervision. The tool has six subscales including (i) trust/rapport, (ii) supervisor advice/support, (iii) improved care/skills, (iv) importance/value of CS, (v) finding time, and (vi) reflection.[28] The MCSS-26 scale uses a 5-point Likert response format with scores ranging from 0 = 'strongly disagree' to 4 = 'strongly agree', with a cumulative score potentially ranging from 0 to 104. Cronbach's alpha for this scale has been reported to be 0.66–0.87.[29]

The Practice Environment Scale, Australia (PES-AUS) is a 30-item validated instrument used to assess nurses' satisfaction with their clinical practice environment[30] and uses a four-point Likert scale ranging from 1 = 'strongly disagree' to 4 = 'strongly agree'. In this study, a midpoint of 3 = 'unsure' was added as it was anticipated that the NGNs may not be familiar with some items in the scale because of their lack of experience as a new employee at the time of the first survey.

Finally, an investigator-developed tool—'Intention to Stay in Clinical Specialty' was adapted from Cowin's[31] Nurse Retention Index (NRI). The NRI is a six-item scale developed to measure nurses' intention to stay in nursing or seek other types of employment. Each item contains a declarative statement, for example, "I would like to stay in nursing as long as possible" on an 8-point Likert scale ranging from 'definitely false (1)' to 'definitely true (8)". Of the six items, two (Items 3 and 6) were reverse-scored items. The NRI has been reported to be reliable with a Cronbach coefficient alpha of 0.94.[32]

In this study, the original six items and sequence of these items were retained. Modification made to the original NRI was the addition of "following my graduate program" at the beginning of each item and addition of "my selected acute care specialty" in the middle or end of each item. The response format was also increased to an 11-point Likert scale ranging from 'definitely false (0)' to 'definitely true (10)" to increase the sensitivity and reliability of this newly developed scale based on the recommendation of Bandura.[33] In addition, a response format from 0 to 10 is simpler, with '5' as the midpoint. An example of the modified item is "Following my new graduate program, I would like to stay working in my selected acute care specialty as long as possible."

3.5. Data analysis

Quantitative data were analysed using IBM SPSS Version 22.0 (Armonk, NY: IBM Corp).[34] Sample characteristics were summarised using descriptive statistics: mean (*SD*) and median (*IQR*) for continuous variables and frequencies and percentages for categorical variables. The PES-AUS and MCSS-26 were normally distributed; however, the remaining continuous variables were skewed, and thus, these variables were dichotomised at the median for bivariate and multivariate analyses. Pearson chi-square test was used to examine for group differences between (a) low–high intention to stay in current ward/unit; and (b) low–high expectations, among those working in critical and noncritical care areas. Multivariate logistic regression analysis was used to identify the predictors of NGNs' intention to stay in a clinical specialty and test the relationships with intention to stay in a critical care ward. Results are reported as adjusted odds ratio with 95% confidence intervals (CIs). A p value of <0.05 was considered to be statistically significant.

4. Results

4.1. Sample characteristics

A total of 109 NGNs consented to participate at baseline from a population of 140 NGNs enrolled in the transitional program from 2012 to 2013. Of these, 87 NGNs completed follow-up surveys, representing a response rate of 80%. Analysis of participants who were lost to follow-up showed they were older than those who completed the 12-month survey (28.04 years vs. 25.79; $p = 0.007$). Of the 22 (20%) NGNs who did not complete follow-up, 15 were unreachable, three resigned from the TSP for other nursing positions, two dropped out because of maternity leave, and two NGNs left nursing.

The median age of participants was 23.0 years (IQR: 21 to 29) years, and 63 (72.4%) were female. During the two clinical rotations within their new graduate year, over one-third, 36 (41%) of the nurses were allocated to work in a critical care area (Table 1). In the study setting, these were general intensive care including trauma, cardiothoracic intensive care, acute coronary care, and the emergency department.

The overall satisfaction with unit-specific orientation ranged from 5 to 8 (median 7). NGNs' satisfaction with the transitional support program ranged from 7 to 8 (median 8). In relation to meeting their expectations and not having to practise beyond capability, the ratings ranged from 2 to 5 (median 5). The mean MCSS-26 score was 73 (IQR: 65–79), and the PES-AUS mean score was 111 (IQR: 99–120). In the present study, the MCSS-26 demonstrated high internal consistency with a Cronbach's alpha

Table 1
Characteristics of new graduate nurses ($n = 87$).

Variable	
Age in years, median (IQR) (range: 18 to 53)	23 (21–29)
Critical care, *n* (%)	36 (41-)
Noncritical care, *n* (%)	51 (59-)
Sex, *n* (%)	
Male	24 (27.6)
Female	63 (72.4)
Overall satisfaction with unit-specific orientation, median (IQR) (range: 0 to 10)	7 (5–8)
Satisfaction with transitional support program, median (IQR), (range 3 to 10)	8 (7–8)
Meeting expectations, not having to practise beyond personal clinical capability, median (IQR) (range: 0 to 8)	5 (2–5)
Satisfaction with clinical supervision—Manchester Clinical Supervision Scale (MCSS) score, median (IQR) (range: 51 to 100)	73 (65–79)
Satisfaction with practice environment—Australian Practice Environment Scale (PES-AUS) score, median (IQR) (range: 81 to 150)	111 (99–120)

IQR, interquartile range.

Table 2
Predictors of new graduate nurses' intention to stay in the current ward/unit ($n = 87$).

Variables	Coefficient (B)	Standard error (SE)	Adjusted odds ratio (95% CI)	P value
Age: more than 23 years	0.700	0.528	2.014 (0.716–5.667)	0.185
Clinical workload expectations, not working beyond capability	1.439	0.686	4.215 (1.099–16.167)	0.036
High satisfaction with practice environment (PES score >111)	0.118	0.574	1.125 (0.365–3.468)	0.838
High satisfaction with clinical supervision (MCSS: >73)	0.522	0.573	1.686 (0.549–5.179)	0.362
High (>7) satisfaction with unit orientation	0.244	0.582	1.277 (0.408–3.992)	0.674
Clinical specialty: critical care	1.876	0.627	6.530 (1.911–22.314)	0.003

CI, confidence interval.
Hosmer–Lemeshow goodness-of-fit for the model, chi-square = 4.324, 7df ($P = 0.742$).
Nagelkerke's $R^2 = 0.246$.

of 0.90. Similarly, the PES-AUS showed a Cronbach's alpha of 0.91. In addition, the Cronbach's alpha of the intention to stay in clinical specialty was 0.88, indicating good internal consistency.

4.2. Predictors of NGNs' intention to stay in the current ward or unit

NGNs' intention to stay in their current ward or unit was directly related to not being placed in clinical situations beyond their capability ($p = 0.036$) and working in a critical care specialty ($p = 0.003$) (Table 2).

In further analyses, NGNs' intention to remain in critical care specialties yielded two independent and significant predictors: (i) high (MCSS: >73) satisfaction with clinical supervision (adjusted odds ratio: 3.861, 95% CI: 1.320–11.293) and (ii) high (>7) satisfaction with unit orientation score (adjusted odds ratio: 3.629, 95% CI: 1.236–10.659) (Table 3).

5. Discussion

This study showed that those working in critical care specialties and those who were not placed in clinical situations beyond their capability were more likely to report an intention to continue in their current ward or unit. Furthermore, NGNs working in a critical care specialty reported higher satisfaction with clinical supervision and higher satisfaction with unit orientation than NGNs working in noncritical care areas. These findings are not surprising as satisfaction with clinical supervision received and clinical supervisors leads to increased satisfaction with practice environment.[24]

In this study, NGNs working in critical care areas were more likely to want to stay in these specialties than those who were allocated to noncritical care areas, a finding that has not previously been reported. Younger RNs have historically been attracted to intensive care unit environments as they reportedly find them challenging and exciting,[16,35] and while age was not a predictor of intention to remain in a critical care area in this study, this finding could be due to dichotomising age at the median which may reduce power and increase the potential for type II errors.[36] Nevertheless, further analysis using a scatterplot of NGNs' intention score and age revealed a negligible association between these variables ($r^2 = 0.002$), suggesting that age was not a predictor of intention to remain in a critical care area.

Of interest was the high proportion of males (27.6%) among the NGNs in this sample, which was much higher than the 5–15% that had been recently reported in another Australian[37] study and a Canadian[38] study. Another reason for the higher proportion of males in the present study could be the prospect of working in a tertiary hospital that has high-level critical care services such as trauma.[39]

Although not working beyond personal capability was a predictor of NGNs' intention to remain in their current wards or unit, this was not the case for those working in critical care units. Despite the increased confidence with increasing nursing experience,[40] this may not be sufficient to buffer NGNs in general ward areas where there is limited support compared with critical care units, wherein NGNs are more closely supervised—often buddied with a senior nurse. In this study, the delivery of clinical supervision varied across both general (noncritical) wards and critical care units, with NGNs in general wards and units receiving two supernumerary days and those in critical care specialties such as an intensive care unit receiving 10 supernumerary days.

Previous research on NGNs' experiences during transition has highlighted a mismatch between the support given and that required.[9] It is consistent with the finding of this study; the NGNs who felt more supported, particularly in critical care areas, were more likely to be satisfied and remain on board.

The intention to leave nursing is reportedly more common among young and newly graduated nurses.[41] This departure from nursing is linked to dissatisfaction with orientation and burnout due to feelings of being poorly prepared for nursing practice.[42] In the critical care areas, the loss of NGNs can have a significant impact on not only the replacement of retiring nurses but also building additional workforce capacity to meet the growing need for critical care nurses.

5.1. Limitations

This study investigated NGNs' intention to stay in critical and noncritical care areas at a single site within Australia. It is possible

Table 3
Predictors of new nurse graduates' intention to remain in critical care area ($n = 87$).

Variables	Coefficient (B)	Standard error (SE)	Adjusted odds ratio (95% CI)	P value
Age: more than 23 years	0.030	0.535	1.030 (0.361–2.938)	0.955
Clinical workload expectations, not working beyond capability	0.475	0.648	1.608 (0.452–5.720)	0.463
High satisfaction with practice environment (PES score >111)	0.486	0.564	1.626 (0.539–4.910)	0.388
High satisfaction with clinical supervision (MCSS: >73)	1.351	0.548	3.861 (1.320–11.293)	0.014
High (>7) satisfaction with unit orientation	1.289	0.550	3.629 (1.236–10.659)	0.019

CI, confidence interval.
Hosmer–Lemeshow goodness-of-fit for the model, chi-square = 8.499, 8df ($P = 0.386$).
Nagelkerke's $R^2 = 0.28$.

that NGNs employed at other settings may differ in terms of their perception of the transitional support program or clinical supervision received and that qualitative data may have provided further explanation for our quantitative findings. Nonetheless, participation rates were high; of those who met the inclusion criteria (81%), more than three-quarters participated in the follow-up survey. An additional limitation in this study was the use of the MCSS-26, PES-AUS, and the intention to stay in clinical specialty tool. Although these measures have been shown to be reliable previously and in this study, this was the first time the scales have been used with NGNs in an acute care setting. Furthermore, although the internal consistency of the 'intention to stay in clinical specialty' tool was computed, content validity was not undertaken.

In this study, the PES-AUS was modified from a 4-point Likert scale to a 5-point Likert scale to include a neutral midpoint of 'unsure' as NGNs were uncertain about some of the items on the PES-AUS tool at baseline. Hence, the aggregated score of the modified PES-AUS in this study should not be compared with the aggregate score reported by Middleton et al.[30]

6. Conclusion

This study is the first to identify that when NGNs are not placed in clinical situations where they have to work beyond their clinical capability, they are more likely to indicate an intention to remain in their current specialty. Importantly, for NGNs assigned to critical care specialties during their TSP, ensuring they receive a good unit orientation and good clinical supervision increases their intention to remain in this setting.

Despite the current support mechanisms available with transitional support programs, fostering clinical competence and confidence requires a concerted effort by front-line clinical supervisors to help NGNs transition into practice. Addressing the mismatch between NGNs' capability and the challenges associated with higher hospital admission rates, patient acuity, and complexity, particularly in critical care settings, will help foster patient safety, a supportive environment, and NGNs' intention to stay in critical care settings.

Ethics approval and consent to participate

Ethics approval was granted by Western Sydney University and South Western Sydney Local Health District Human Research Ethics Committees (H10055, LNR/11/LPOOL/510). Written informed consent was obtained from all participants.

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Availability of data and materials

The data sets used and/or analysed during the present study are available from the corresponding author on reasonable request.

Authors' contributions

R.H., Y.S., B.E., and W.H. contributed to the conception and design of the study; R.H. collected the data; R.H. and Y.S. analysed the data; and R.H., B.E., Y.S., and W.H. prepared the manuscript. All authors have read and approved the final manuscript.

Consent for publication

Not applicable

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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.2018.09.003.

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