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[Lynette Cusack](#) , [Loren Madsen](#) , [Judy Boychuk Duchscher](#) , [Wenpeng You](#) *

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Article

Growth and Adaptation of Newly Graduated Nurses Based on Duchscher’s Stages of Transition Theory and Transition Shock Model: A Longitudinal Quantitative Study

Lyne e Cusack ¹, Loren Madsen ², Judy Boychuk Duchscher ³ and Wenpeng You ^{1,4,*}

¹ Adelaide Nursing School, The University of Adelaide South Australia

² Little Company of Mary Health Care Ltd, 207 Wakefield Street Adelaide South Australia

³ School of Nursing, Thompson Rivers University, Kamloops, British Columbia, Canada

⁴ School of Nursing and Midwifery, Western Sydney University, Sydney, Australia

* Correspondence: w.you@westernsydney.edu.au

Abstract

Aim: To examine the professional role development of new graduate nurses (NGNs) across three transition stages within a major Australian health service. **Background:** The shift from student to registered nurse is a critical period marked by emotional strain, role ambiguity, and transition shock. Structured support programs have emerged to ease this transition, yet few are evaluated through longitudinal, theory-informed approaches using validated tools. **Design:** A longitudinal quantitative study guided by Duchscher’s Stages of Transition Theory and the Transition Shock Model. **Methods:** A customised 75-item questionnaire, adapted from the Professional Role Transition Risk Assessment Instrument and Professional and Graduate Capability Framework, was distributed across three transition points (March 2020 to March 2021). The survey assessed four domains: Responsibilities, Role Orientation, Relationships, and Knowledge and Confidence. Descriptive statistics, Principal Component Analysis, Chi-square tests, and multinomial logistic regression were used to analyse patterns, trends, and predictors of successful transition. **Results:** A clear developmental trajectory emerged. Early-stage participants experienced stress, low self-efficacy, and role confusion. By Stage 3, most demonstrated increased clinical confidence, autonomy, and integration into professional healthcare teams. A coordinator-to-graduate ratio of 1:12 facilitated personalised mentorship and supportive practice environments. Statistically significant improvements were observed in critical thinking, leadership perception, emotional resilience, and team communication. **Conclusions:** This study provides robust empirical support for theoretically grounded and policy-aligned Graduate Nurse Transition Programs. Targeted interventions tailored to each transition phase—such as early mentorship, mid-stage stress support, and end-stage leadership development—can enhance confidence, improve role clarity, and promote long-term workforce capability and sustainability.

Keywords: graduate nurses; professional development; first-year transition; clinical confidence; longitudinal study

1. Introduction

The transition from student to professional nurse represents a critical juncture in a nurse’s career, significantly influencing long-term outcomes such as job satisfaction, clinical competence, and workforce retention (1-5). This period is frequently marked by a sudden escalation in clinical responsibility, emotional strain, and adjustment to complex professional roles (6, 7). New graduate nurses (NGNs) often report feeling underprepared for the realities of clinical practice, a phenomenon described by Duchscher (2009) as “transition shock,” (8) which involves cognitive overload,

emotional instability, and a temporary loss of confidence (9). These early encounters in the workplace are crucial, as they can shape not only individual career trajectories but also the stability and sustainability of the nursing workforce (10-12).

In recognition of these challenges, healthcare systems around the world have implemented structured support mechanisms such as Transition to Practice Programs (TTPPs) and Graduate Nurse Transition Programs (GNTPs) (13-15). These programs are designed to ease the shift from student to registered nurse by offering structured orientation, clinical supervision, professional development sessions, and access to mentorship and peer networks (16, 17). A growing body of literature supports the effectiveness of these interventions (18, 19). Studies have demonstrated that GNTPs can improve clinical performance (20), enhance confidence and professional identity (21), reduce attrition (17), and ultimately improve patient care quality (22). However, despite these demonstrated benefits, many programs are not underpinned by consistent theoretical models, and their long-term impacts remain under-evaluated, particularly through rigorous longitudinal, quantitative methods (10).

Among the few guiding frameworks, Duchscher's Stages of Transition Theory and the Transition Shock Model are widely acknowledged in both academic and policy contexts (23, 24). These models delineate NGNs' progression through three stages: "Doing," characterised by task-oriented survival; "Being," marked by self-reflection and role internalisation; and "Knowing," associated with growing autonomy and professional identity (23, 25). While these conceptual models have informed program design and policy across various health systems, few empirical studies have systematically tracked NGNs' progression through these stages or examined which domain-specific factors predict successful transition. Moreover, much of the existing research in this area is qualitative or cross-sectional, which limits the ability to understand how professional growth unfolds over time or to inform evidence-based workforce development strategies (26).

Recent reviews have highlighted the need for theory-driven, longitudinal research to capture the full complexity of NGNs' development and to inform targeted support strategies (20). For instance, Edwards et al. (2015) advocate for a broader focus beyond retention outcomes, suggesting the importance of tracking role clarity, decision-making ability, workplace relationships, and emotional regulation (27). These dimensions are particularly relevant in high-pressure environments like acute care settings, where early career stress is heightened and the need for supportive infrastructure is critical (28).

Addressing these gaps, the current study presents a longitudinal evaluation of a Graduate Nurse Transition Program embedded within a major national health service in Australia, encompassing both public and private hospitals. The program was intentionally designed around Duchscher's theoretical principles and supported by policy-directed interventions, including access to Graduate Nurse Coordinators, preceptors, and clinical educators. A customised 75-item survey instrument, adapted from the Professional Role Transition Risk Assessment Instrument and the Professional and Graduate Capability Framework, was used to collect data across three defined transition stages: Stage 1 (March to July 2020), Stage 2 (July to October 2020), and Stage 3 (October 2020 to March 2021). The survey assessed four key domains central to professional development: Responsibilities, Role Orientation, Relationships, and Knowledge and Confidence.

The primary aim of this study was to evaluate how NGNs' perceptions and capabilities evolve throughout their first year of clinical practice. Specifically, it sought to (1) track changes across the four domains, (2) identify statistically significant differences between transition stages, and (3) determine the key predictors of successful transition. In doing so, the study provides robust, data-driven validation of a theory-informed transition framework and contributes new empirical insights into NGN development in complex healthcare environments (18).

2. Materials and Methods

2.1. Design and Framework

This longitudinal quantitative study used the same data collection framework as described by Cusack et al. (24). The theoretical underpinnings of Duchscher's work were operationalized through policy directives and integrated within the health service's GNTP. Graduate Nurse Coordinators (GNCs), Nurse Managers (NMs), and preceptors supported the implementation of structured orientation, educational sessions, and regular evaluation aligned with the theoretical model.

2.2. Survey Instrument and Domains

A customized survey tool adapted from the Duchscher Professional Role Transition Risk Assessment Instrument (8) and the Professional and Graduate Capability Framework (29, 30) was used, with permission from the original authors. The survey included 75 items covering four primary domains: Responsibilities (RS), Role (RO), Role Learning (RL), and Knowledge and Confidence (KN). Each item was measured using a 7-point Likert scale, ranging from 'Strongly Disagree' to 'Strongly Agree'. Emotional assessment items were also embedded to monitor transition-related wellbeing (24).

2.3. Data Collection and Sample

Online surveys were distributed via SurveyMonkey™ at three time points aligned with the transition stages. New Graduate Registered Nurses (NGRNs) employed in both public and private hospitals, which are part of one national Australian health service, were invited to participate using their work emails. Data were collected at one month, five months, and eleven months into the 12-month GNTP. The present analysis focuses on a subset of 158 graduate nurses who responded to at least one survey across time points.

2.4. Statistical Analysis

Descriptive statistical analyses were conducted to summarise item-level trends across the three transition stages, reporting means and standard deviations. These analyses provided an overview of how graduate nurses' perceptions of role clarity, clinical confidence, and workplace integration evolved over time.

Principal Component Analysis (PCA) was performed to examine the underlying factor structure of the survey instrument and validate its four conceptual domains: Responsibilities (RS), Role Orientation (RO), Role Learning (RL), and Knowledge and Confidence (KN). PCA was conducted separately for each transition stage and for the combined dataset to evaluate the consistency and progression of factor structures over time. Sampling adequacy was assessed using the Kaiser-Meyer-Olkin (KMO) test, and Bartlett's Test of Sphericity was applied to confirm the appropriateness of the correlation matrix. Factors were extracted using varimax rotation to maximise interpretability, retaining components with eigenvalues greater than 1.0 (Kaiser's criterion). Items with factor loadings ≥ 0.40 were included in the corresponding factor, while items with cross-loadings (≥ 0.40 on multiple factors) were assigned based on theoretical alignment. Items with low or ambiguous loadings (< 0.40) were excluded. This procedure supported the construct validity of the survey and revealed meaningful changes in thematic patterns across transition stages.

For inferential analyses, survey responses on the original 7-point Likert scale were recoded into three ordinal categories to meet the assumptions of chi-square and logistic regression tests. Specifically, "Strongly Disagree" (1), "Disagree" (2), and "Somewhat Disagree" (3) were grouped as "Disagree" (1); "Neither Agree nor Disagree" (4) was retained as "Neutral" (2); and "Somewhat Agree" (5), "Agree" (6), and "Strongly Agree" (7) were grouped as "Agree" (3). This recoding created a three-level ordinal variable for each item.

Chi-square (χ^2) tests were used to examine whether the distribution of item responses differed significantly across the three transition stages (Stage 1, Stage 2, and Stage 3). These analyses identified statistically significant changes in graduate nurses' self-reported perceptions related to professional development, confidence, and workplace integration.

To determine predictors of transition stage, multinomial logistic regression analysis was conducted using transition stage as the categorical outcome variable, with Stage 3 as the reference category. Each survey item was entered individually to assess its association with being in Stage 1 or Stage 2 relative to Stage 3. Odds ratios and 95% confidence intervals were reported to indicate the strength and direction of associations. Regardless of statistical significance, all item-level results were reported to provide a complete view of the predictors across domains. All regression models were adjusted for potential confounders to enhance internal validity.

All statistical analyses were conducted using IBM SPSS Statistics (version 30), with the significance level set at $p < .05$.

3. Results

Table 1 presents the descriptive statistics for key transition-related items across three stages of graduate Nurse/Midwife experience. Overall, the findings indicate progressive improvements in role clarity, clinical confidence, workplace integration, and professional identity over time.

Participants reported consistently strong understanding of their responsibilities as practicing Nurse/Midwives, with mean scores slightly increasing from Stage 1 ($M = 5.54$, $SD = 0.53$) to Stage 3 ($M = 5.67$, $SD = 0.55$), suggesting reinforced role clarity with experience. However, perceptions of mismatch between personal understanding and workplace expectations (RS2) also increased modestly across stages (Stage 1: $M = 2.72$; Stage 2: $M = 2.77$; Stage 3: $M = 2.90$), indicating some ongoing negotiation of role boundaries despite increased clarity.

Participants' clinical confidence improved steadily across the stages. Confidence in communicating with the team leader (RS4) increased from $M = 5.51$ (Stage 1) to $M = 5.83$ (Stage 3), and confidence in making clinical decisions (RS6) rose from $M = 4.56$ to $M = 4.97$. Confidence in working with Allied Health (RS5) and practicing independently (RS8) also showed upward trends, reflecting growing autonomy and competence over time.

Role confusion, as indicated by RS7 ("I sometimes confuse my previous role as a student..."), decreased consistently across stages (Stage 1: $M = 3.61$; Stage 2: $M = 2.71$; Stage 3: $M = 2.00$), suggesting improved integration of professional identity. Emotional adjustment indicators remained stable or improved, with low and decreasing scores on items related to considering leaving the current workplace (RS16) or the nursing profession (RL22, RL23).

Perceptions of respect and workplace relationships improved over time. For instance, respect from Nurses/Midwives (RO6) rose from $M = 4.61$ in Stage 1 to $M = 5.17$ in Stage 3, while respect from medical officers (RO9) also increased. Participants consistently reported high levels of comfort in approaching senior staff and educators (RL7–RL12), with mean scores above 5.00 by Stage 3, reflecting strong workplace integration and support.

Satisfaction with the professional role remained high across all stages. Enjoyment in the role (RL13) remained stable (Stage 1: $M = 5.23$; Stage 3: $M = 5.28$), and the perception that the role met prior expectations (RO10) improved (Stage 1: $M = 4.50$; Stage 3: $M = 4.86$). Participants also increasingly felt capable of assuming leadership roles (RL1) and managing shiftwork demands (RL17).

Knowledge and cognitive readiness showed a clear positive trajectory. Confidence in critical thinking (KN5) increased from $M = 4.46$ in Stage 1 to $M = 5.03$ in Stage 3. Similarly, participants' ability to recognise transition processes (KN15, KN16) improved, indicating a growing meta-awareness of their own professional development. Notably, while workplace investment in ongoing learning was perceived to be high overall, a slight decline was observed at Stage 3 (KN9: $M = 5.11$ in Stage 2 to $M = 4.83$ in Stage 3), possibly reflecting a shift toward self-directed professional growth.

Collectively, these findings suggest that as graduate Nurse/Midwives progress through their transition, they experience increasing confidence, clearer professional identity, stronger workplace relationships, and reduced transitional stress. Nonetheless, areas such as role expectation alignment and continued professional development support may benefit from targeted attention during the later stages of transition. Table 2 illustrates a structured progression in new graduate nurses' development across the four domains: Responsibilities, Roles, Relationships, and Knowledge. Initially, graduates experienced uncertainty and role confusion, with early factor structures dominated by stress and misalignment (e.g., RS2: 0.811; RO17: 0.781). By mid-year, there was a noticeable shift toward improved professional clarity, growing peer support, and increasing clinical competence (e.g., KN8: 0.666; RL2: 0.712), although emotional strain persisted. In the final phase, high loadings on leadership, autonomy, and critical thinking (e.g., RO5: 0.872; RS13: 0.894; KN4: 0.865) reflected professional maturity and consolidation. These findings highlight the importance of phase-specific interventions, including early-stage mentoring, mid-year stress management, and end-of-year leadership development, to support a smooth and sustained transition into professional practice.

Responsibilities (RS): In Phase 1 (0–4.5 months), new graduate nurses faced significant role ambiguity and emotional strain. RS2 ("My understanding differs from workplace expectations") loaded highly at 0.811 on the stress-related factor, and RS7 ("I confuse student and current role") had a strong negative loading of −0.742, indicating adjustment challenges. By Phase 2 (5–7 months), confidence in clinical judgment emerged, as reflected in RS6 ("Confident with clinical decisions," 0.697) and RS8 ("Confident practicing independently," 0.832), although work-related stress persisted (RS15: −0.748). In Phase 3 (8–10 months), resilience and autonomy became defining characteristics, with RS12 ("Perseverance when things go wrong") loading at 0.877 and RS13 ("Readjusting care plans") at 0.894, marking the development of professional adaptability and confidence.

Roles (RO): During the initial phase, nurses sought to establish respect and role clarity within the team. High loadings for RO6 ("Respected by Nurses/Midwives," 0.777) and RO8 ("Respected by non-clinical staff," 0.852) reflected the importance of early workplace validation. Role differentiation was still developing, as shown by RO2 and RO3 (0.647 and 0.673, respectively). In Phase 2, role expectations became clearer: RO1 ("Understanding others' expectations") loaded at 0.782, and RO10 ("Role matches expectations") at 0.745. By Phase 3, leadership and emotional maturity solidified, with RO5 ("Leadership role") loading at 0.872 and RO15 ("Receiving feedback without blame") at 0.900, while career doubts diminished (RO17: −0.654), indicating growing professional confidence.

Relationships (RL): In early practice, graduate nurses focused on leadership potential and managing emotional pressures. RL1 ("Seen as a potential leader") loaded at 0.863, but high stress levels were also evident (RL22: −0.922; RL23: −0.881). By Phase 2, supportive relationships had strengthened, as seen in RL10 and RL11 ("Comfort approaching GNTP Coordinator" and "Clinical Educator," loadings 0.937 and 0.963), alongside improved peer acceptance (RL2: 0.712). In Phase 3, these relational foundations matured into confidence and integration, with continued strong leadership loadings (RL1: 0.863) and improved workplace dynamics (RL12: 0.655), supported by wellness strategies like self-care (RL15: 0.771) and recognition of transition support (RL16: 0.711).

Knowledge (KN): In Phase 1, knowledge confidence was largely rooted in formal education. KN1 ("Formal education prepared me") loaded at 0.876, and clinical skills (KN2: 0.735; KN3: 0.742) were also strong, though self-assessment remained misaligned (KN13: −0.513). By Phase 2, clinical adaptability and decision-making improved (KN4: 0.825; KN5: 0.756), and transition awareness became prominent (KN15: 0.843; KN16: 0.725). In Phase 3, professional integration was evident through high loadings in clinical judgment (KN4: 0.865), alignment in self-expectations (KN13: 0.710), and trust in workplace development support (KN9: 0.776), reflecting a shift from academic reliance to confident clinical engagement.

Table 2 principal Component Loadings (≥ 0.40) and Factor Descriptions Across Stages.

Table 3 presents a stage-based progression in graduate nurses' development across four key domains. Statistically significant improvements were observed in clinical communication, emotional regulation, leadership perception, workplace respect, and critical thinking. The most pronounced

changes occurred within the Responsibilities and Role Learning domains, while selective but meaningful gains were noted in the Roles and Knowledge and Confidence domains. Overall, the data reflect a transition from early-stage uncertainty and role confusion to later-stage professional identity, autonomy, and emotional resilience.

Table 3. Chi-Square Test Results for Survey Items Across Phases: Stage 1, Stage 2, and Stage 3.

Item Code	Item Description	Chi-Square Value	df	p-value
RS (Responsibility) Item				
RS1	I understand my responsibilities as a practicing Nurse/Midwife	0.436	2	0.804
RS2	My understanding of my responsibilities as a practicing Nurse/Midwife does differ from what the workplace expects	5.61	4	0.23
RS3	I am confident calling a medical officer about my patient	9.949	4	0.041
RS4	I am confident speaking to the Team leader about my patient	3.573	4	0.467
RS5	I am confident working with Allied Health (Physio, OT, Social Worker)	8.529	4	0.074
RS6	I am confident with the clinical decisions that I make	14.996	4	0.005
RS7	I sometimes confuse my previous role as a student with my current role as a practicing Nurse/Midwife	24.477	4	<.001
RS8	I am confident practicing independently as a Nurse/Midwife	7.551	4	0.109
RS9	I feel confident caring for patients families	9.532	4	0.049
RS10	I am able to organise my work and manage my time effectively	12.401	4	0.015
RS11	I am able to remain calm under pressure or when things go wrong	16.205	4	0.003
RS12	I am willing to persevere when things are not working out as anticipated	5.392	4	0.249
RS13	I am able to readjust my plan of care in light of what happens when it is implemented	5.843	4	0.211
RS14	I participate in the social culture of my work place	4.289	4	0.368
RS15	I think about work on my days off	5.458	4	0.243
RS16	There are times I have considered leaving my current workplace	0.632	4	0.959
RO (Role) Item				
RO1	I understand what others expect of me (e.g., Clinical Nurse Manager, Team Leader, Coworkers, Assistant in Nursing)	2.813	2	0.245
RO2	I understand the difference between my role and that of an Assistant in Nursing (AIN)	0.547	2	0.761
RO3	I understand the difference between my role and that of my senior nurse	5.78	4	0.216

	coworkers (e.g., Clinical Nurse Manager, Clinical Nurse, Team Leader)			
RO4	I understand the difference in accountability between a Registered Nurse/Midwife and an Enrolled Nurse	6.896	4	0.142
RO5	I take a leadership role in my workplace	17.731	4	0.001
RO6	I feel respected by the Nurses/Midwives that I work with	13.307	4	0.01
RO7	I feel respected by the Assistant in Nurses that I work with	3.043	4	0.551
RO8	I feel respected by the non-clinical staff that I work with	2.849	4	0.583
RO9	I feel respected by the Medical Officers that I work with	4.054	4	0.399
RO10	My role as a Nurse/Midwife is what I thought it would be like	6.337	4	0.175
RO11	I am able to work with senior staff without feeling intimidated	5.872	4	0.209
RO12	I am able to identify from a mass of detail/information the core issue in any situation	17.435	4	0.002
RO13	I have a sense of humour and am able to keep work in perspective	5.54	4	0.236
RO14	I am able to balance my personal life with my work life	7.909	4	0.095
RO15	I am able to receive constructive feedback from coworkers without feeling any personal blame	5.144	4	0.273
RO16	Moving from student to Nurse/Midwife was more difficult than I expected	6.235	4	0.182
RO17	There are times when I have questioned my decision to become a Nurse/Midwife	2.37	4	0.668
RL (Relationship) Item				
RL1	I am seen as a potential leader in my workplace	26.462	4	<.001
RL2	I feel accepted by the Nurses/Midwives that I work with	5.887	4	0.208
RL3	I feel accepted by the Assistants in Nursing that I work with	0.946	4	0.918
RL4	I feel accepted by the Medical Officers that I work with	3.542	4	0.472
RL5	I know how to report a practice concern in the workplace	2.622	4	0.623
RL6	I feel safe reporting professional behaviour that concerns me	6.55	4	0.162
RL7	I feel comfortable approaching the Clinical Nurse Manager	9.883	4	0.042
RL8	I feel comfortable approaching the Team Leader or equivalent	2.82	4	0.588
RL9	I feel comfortable approaching my assigned Preceptor(s)	2.489	4	0.647
RL10	I feel comfortable approaching the dedicated GNTF Coordinator	4.056	4	0.398

RL11	I feel comfortable approaching the L&D Coordinator/Clinical Educator	3.048	4	0.55
RL12	I feel comfortable approaching my Nursing/Midwifery coworkers	1.744	2	0.418
RL13	I enjoy being a Nurse/Midwife	0.751	4	0.945
RL14	I feel welcomed into the workplace	4.776	4	0.311
RL15	I take time to practice self-care	2.48	4	0.648
RL16	My workplace recognises and supports my transition	4.272	4	0.37
RL17	I am able to manage the challenges of shift work effectively	4.931	4	0.294
RL18	I have been involved in a Clinical Incident	21.12	4	<.001
RL19	I worry about my responsibilities/workload before beginning my shift	7.586	4	0.108
RL20	I find it difficult to sleep between shift changes, as I am anxious about the next shift	12.376	4	0.015
RL21	I have taken Personal Leave due to my issues/concerns regarding my work	9.606	4	0.048
RL22	I have considered leaving Nursing as a profession	2.421	4	0.659
RL23	I plan to leave the profession of Nursing	1.163	2	0.559
KN (Knowledge) Item				
KN1	My formal education prepared me to practice as a professional Nurse/Midwife	6.12	4	0.19
KN2	I feel confident performing the clinical skills required of me	7.699	4	0.103
KN3	I feel confident performing clinical care to patients with complex needs	5.552	4	0.235
KN4	I feel confident responding to changes in the clinical status of my patients	8.998	4	0.061
KN5	I feel confident in my ability to think critically	11.303	4	0.023
KN6	I feel confident escalating my concerns regarding the condition of my patients	8.454	4	0.076
KN7	My perceptions of the Nursing/Midwifery profession were accurate	4.151	4	0.386
KN8	I have the knowledge I need to practice Nursing/Midwifery	6.781	4	0.148
KN9	My workplace is invested in my ongoing learning and professional development	2.761	4	0.599
KN10	The Nurses/Midwives that I work with have realistic expectations of my clinical abilities	5.412	4	0.248
KN11	The Clinical Nurse Manager has a realistic expectation of my clinical abilities	6.283	4	0.179
KN12	The Team Leader has a realistic expectation of my clinical abilities	2.883	4	0.578

KN13	I have a realistic expectation of my clinical abilities	8.62	4	0.071
KN14	I am able to see how apparently unconnected activities are linked to make up an overall clinical picture	2.46	4	0.652
KN15	I understand the three stages of Transition	2.842	4	0.585
KN16	I know how to recognise Transition Shock	4.359	4	0.36

Responsibilities (RS): Significant developmental differences emerged across training stages in the Responsibilities domain, reflecting increasing professional competence. The most marked change was in RS7 ("Confuse student vs. nurse role"), with a highly significant result ($\chi^2(4) = 24.477, p < .001$), indicating a steady reduction in role confusion. Additional items showing significant improvements included RS3 ("Confident calling a medical officer"; $\chi^2 = 9.949, p = .041$), RS6 ("Confident with clinical decisions"; $\chi^2 = 14.996, p = .005$), and RS9 ("Confident caring for families"; $\chi^2 = 9.532, p = .049$), suggesting growing self-efficacy in communication and relational care. Organizational and stress-regulation capacities also improved, as evidenced by RS10 ("Organise work/time"; $\chi^2 = 12.401, p = .015$) and RS11 ("Remain calm under pressure"; $\chi^2 = 16.205, p = .003$). Collectively, these findings demonstrate a clear shift from initial uncertainty toward confidence and task mastery.

Roles (RO): Within the Roles domain, three items showed significant improvement over time. Nurses reported increasing engagement in leadership activities (RO5; $\chi^2 = 17.731, p = .001$), enhanced perceptions of peer respect (RO6; $\chi^2 = 13.307, p = .010$), and improved ability to identify key clinical issues (RO12; $\chi^2 = 17.435, p = .002$). These outcomes point to the strengthening of professional identity, integration into team dynamics, and refinement of clinical reasoning. While most items remained statistically stable, these findings suggest that leadership readiness and critical thinking capacity develop meaningfully with experience.

Role Learning (RL): The Role Learning domain demonstrated significant developmental progress across several indicators. Perceptions of leadership potential increased markedly (RL1; $\chi^2 = 26.462, p < .001$), alongside improved communication with senior staff such as Clinical Nurse Managers (RL7; $\chi^2 = 9.883, p = .042$). Notably, involvement in clinical incidents rose with training stage (RL18; $\chi^2 = 21.120, p < .001$), likely reflecting expanded responsibility and decision-making. Stress-related indicators such as RL20 ("Difficulty sleeping between shifts"; $\chi^2 = 12.376, p = .015$) and RL21 ("Took personal leave"; $\chi^2 = 9.606, p = .048$) also varied significantly, highlighting the emotional toll accompanying increased clinical complexity. These results underscore the parallel emergence of leadership capacity and psychological strain, suggesting a need for sustained wellbeing support.

Knowledge and Confidence (KN): The Knowledge domain remained relatively stable across stages, with one notable exception: KN5 ("Confident in critical thinking ability") showed significant growth ($\chi^2 = 11.303, p = .023$), indicating that critical thinking develops meaningfully with practical exposure. Items such as KN4 (responding to clinical changes), KN6 (escalating patient concerns), and KN13 (realistic self-assessment) approached significance, hinting at gradual but important shifts in applied clinical confidence. In contrast, items related to formal education and workplace expectations remained consistent, suggesting that while baseline knowledge is established early, its confident application evolves over time.

Table 4 presents the results of multinomial logistic regression examining predictors of transition stage among graduate nurses and midwives across four domains: Responsibilities (RS), Role Orientation (RO), Relationships (RL), and Knowledge/Confidence (KN). The transition stages were categorized as Stage 1, Stage 2, and Stage 3.

Across the responsibility domain, several indicators were significantly associated with transition stage. Notably, participants who expressed confusion between their current professional role and their previous role as a student (RS7, $\chi^2 = 18.112, p = .001$) were more likely to be in earlier stages, suggesting that role clarity improves over time. Similarly, those who reported confidence in staying

calm under pressure (RS11, $\chi^2 = 11.177$, $p = .025$) were more likely to progress to later stages. Trends were also observed for time management (RS10, $p = .089$) and socialising with coworkers (RS14, $p = .075$), implying these skills and behaviours may facilitate transition but did not reach statistical significance.

Within the role orientation domain, the ability to identify core clinical issues (RO12, $\chi^2 = 27.538$, $p < .001$) emerged as the strongest predictor of transition stage. Participants who balanced work and personal life (RO14, $\chi^2 = 10.705$, $p = .030$), received constructive feedback positively (RO15, $\chi^2 = 10.988$, $p = .027$), and had questioned their decision to become a nurse (RO17, $\chi^2 = 9.545$, $p = .049$) were also more likely to be in earlier stages, reflecting the emotional and cognitive adjustments during early professional development.

In the relationship domain, being seen as a potential leader (RL1, $\chi^2 = 25.590$, $p < .001$) and feeling comfortable approaching coworkers (RL12, $\chi^2 = 26.223$, $p < .001$) were strongly associated with advanced transition stages. Additionally, those who felt their workplace recognised and supported their transition (RL16, $\chi^2 = 12.760$, $p = .013$), had been involved in a clinical incident (RL18, $\chi^2 = 36.640$, $p < .001$), or experienced pre-shift workload anxiety (RL19, $\chi^2 = 10.494$, $p = .033$) were significantly more likely to differ by transition stage. Difficulty sleeping between shifts due to anxiety (RL20, $\chi^2 = 25.483$, $p < .001$) was also a robust psychological predictor of transition progression.

Lastly, in the knowledge and confidence domain, participants who believed their formal education had prepared them well (KN1, $\chi^2 = 10.190$, $p = .037$) and those who reported realistic self-assessment of their clinical abilities (KN13, $\chi^2 = 10.858$, $p = .028$) were more likely to be in later transition stages. These findings underscore the importance of both perceived educational readiness and self-efficacy in facilitating smoother transitions into practice.

Collectively, these results highlight that graduate nurse transition is shaped by a complex interplay of role clarity, emotional regulation, relational dynamics, and confidence in professional competencies. Interventions aiming to support early career nurses should address these multifaceted domains to enhance transition outcomes.

Table 4 multinomial Logistic Regression Results: Predictors of Graduate Nurse and Midwife Transition Stage.

4. Discussion

This study provides longitudinal, empirical support for Duchscher's (2008, 2009) Stages of Transition Theory and the Transition Shock Model (8, 23), affirming the complex psychosocial and clinical progression that new graduate nurses (NGNs) undergo in their first year of professional practice. The three-stage model observed (31), which progresses from initial stress and role confusion to increasing confidence and professional integration, reflects the findings of earlier studies that highlight the vulnerability of early-career nurses and the importance of structured transition support (7, 10, 16).

In Stage 1, participants exhibited characteristics typical of transition shock, including low confidence (RS3), role confusion (RS7), and difficulty coping with workplace stressors (RS11). These indicators were statistically significant across stages (RS7: $\chi^2 = 18.112$, $p = .001$; RS11: $\chi^2 = 11.177$, $p = .025$), consistent with Duchscher's (2008) description of the emotional dissonance and role ambiguity that characterise the early phase of practice (23). Labrague and McEnroe-Petitte (2017) similarly identified that NGNs commonly experience anxiety and low self-efficacy due to the gap between academic preparation and real-world clinical demands (32). PCA loadings further confirmed this: RS2 and RS7 loaded on factors related to stress and misalignment across all three phases, underscoring the persistent impact of educational-practice incongruence (20).

Mentorship emerged as a key enabler of progression (33). The 1:12 GNTP coordinator-to-graduate ratio allowed for regular, individualised support, which participants consistently identified as a facilitator of emotional regulation, relational confidence, and workplace integration (24). Logistic regression revealed that RL10 (support from GNTP coordinator), RL11 (L&D coordinator), and RL12 (peer approachability) significantly predicted progression to later stages (e.g., RL12: $\chi^2 = 26.223$, $p <$

.001). These results align with previous studies which found that quality mentorship and consistent access to experienced staff enhance graduate nurse adjustment, confidence, and job satisfaction (34–36). Whitehead (2016) also emphasised that support structures must be flexible and responsive to individual needs, which was a key feature of the program examined in this study (35).

Stage 2 findings showed marked improvements in clinical communication (RS3), self-assessed knowledge (KN5), and the ability to prioritise and analyse information (RO12). These outcomes suggest a shift from coping to consolidation, consistent with findings by Gardiner and Sheen (2016), who reported that mid-transition periods are crucial for reinforcing skills and promoting confidence through team integration. RO12, in particular, emerged as a strong predictor of transition stage ($\chi^2 = 27.538$, $p < .001$), reflecting the increasing importance of critical thinking in professional maturity (37).

Stage 3 reflected a transition into autonomy and professional identity. Participants scored highly on RS13 (care plan adjustment), RO5 (leadership roles), and KN2 (clinical decision confidence), and these items showed high PCA loadings in Phase 3 (e.g., RS13: .894; RO5: .872). These findings align with Keshk and Mersal (2017) and Bratt and Felzer (2012), who reported increased decision-making autonomy and leadership emergence as key features of late-stage transition (15, 21). Participants also showed improvements in emotional resilience (RS12) and adaptability (KN4), indicating a move from dependence to competence, as outlined in Duchscher's "Knowing" stage (8).

Despite these advancements, emotional stressors remained evident. RL19 (worry before shifts) and RL20 (sleep disturbances) were significantly associated with earlier stages (RL20: $\chi^2 = 25.483$, $p < .001$), highlighting that psychological burdens can persist even as clinical skills improve. This is supported by Epsteins et al. (2019), who noted that sleep disruption and emotional fatigue often continue throughout the first year, regardless of competence gains (38).

Multinomial logistic regression identified a set of robust predictors across domains. Items such as RS7 (role confusion), RO17 (doubt about career choice), RL1 (perceived leadership potential), and KN1 (perception of academic preparation) significantly predicted stage placement. For instance, RO17 ($\chi^2 = 9.545$, $p = .049$) was associated with questioning one's career decision, particularly in Stage 1, a pattern also identified by Hunter and Cook (2018), who advocated for incorporating clinical realism into undergraduate education to help manage expectations (39).

Institutional support and interpersonal relationships were also significant. Items reflecting comfort in approaching senior staff (RL7), perceived respect (RO6), and availability of mentorship (RL10–12) were consistently linked with higher transition stages. These results echo Whitehead et al. (2016) and Kaihlanen et al. (2018), who emphasised that feeling respected and supported within teams directly contributes to professional integration (20, 40).

Overall, this study contributes empirical evidence to the growing body of literature supporting structured, theory-informed transition programs (41). The progression observed, from initial anxiety and uncertainty to emerging autonomy and leadership, mirrors findings reported across diverse healthcare settings and highlights the interconnected roles of individual development and institutional support (20, 21, 42).

These findings emphasise the importance of structured, stage-specific support systems that address early emotional stress, foster clinical skill consolidation during the mid-transition phase, and promote leadership development in the later stages to support a successful transition to professional practice (43, 44).

The generalisability of these findings is limited by the study's context within a single Australian health service. Organisational culture, support structures, and staffing models may differ across institutions and regions, potentially affecting transition experiences. Therefore, while the observed developmental trajectories align with established theory and comparable international studies, caution should be exercised in applying these results to graduate nurse cohorts in different healthcare settings or countries.

While the findings offer valuable insight into graduate nurse transition, they should be interpreted cautiously in light of several limitations, including self-reported data, sample specificity, and multiple statistical comparisons that may increase the risk of type I error. Nonetheless, the

consistency of trends with prior theoretical and empirical research strengthens the validity of observed patterns. Future studies across diverse settings and using mixed methods could help confirm and expand upon these findings.

5. Conclusions

This quantitative analysis provides robust empirical evidence supporting the effectiveness of a well-structured Graduate Nurse Transition Program (GNTP) underpinned by Duchscher's theoretical framework and guided by clear organisational policy. The findings demonstrate that such programs play a critical role in enhancing graduate nurses' clinical confidence, emotional resilience, and workplace integration. By facilitating a smoother transition into professional practice, GNTPs not only support individual development but also contribute to broader workforce stability and long-term retention. These results highlight the strategic importance of sustained organisational investment in transition programs as a means of strengthening nursing capacity and promoting high-quality, safe, and sustainable patient care.

6. Study Limitations

This study has several limitations. First, although the longitudinal design provides insights into the progression of graduate nurses over time, the data were self-reported and may be subject to recall bias and social desirability effects. Second, the sample was limited to graduate nurses within one Australian health service, which may affect the generalisability of findings to other contexts or international settings. Third, attrition across the three survey waves may have influenced the representativeness of later-stage responses, although a substantial proportion of participants completed more than one time point. Fourth, while the study employed robust statistical methods including PCA and multinomial logistic regression, some domain-specific predictors of transition success may have been missed due to the item-level modelling approach. Lastly, although the survey was adapted from validated tools, psychometric properties may evolve over time and should be re-evaluated in future cohorts.

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Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Ethics Committee of Calvary Health Care Adelaide's Human Research Ethics Committee (20-CHREC-E002) and the University of Adelaide Human Research Ethics Committee (34389).

Informed Consent statement: Informed consent was obtained from all subjects involved in the study.

Data availability Statement: The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to approval by the relevant Human Research Ethics Committee and in accordance with institutional data sharing policies. .

Public Involvement statement: There was no public involvement in any aspect of this research. Only deidentified data from graduate nursing students were included in the study. .

Guidelines and Standards Statement: This study was designed, conducted, and reported in accordance with established guidelines for quantitative research in the health sciences. The reporting adheres to the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist for cross-sectional and longitudinal observational studies. All statistical analyses were performed following best practices for psychometric evaluation and multivariable modelling.

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Abbreviations

Principal Component Analysis (PCA)
Transition to Practice Programs (TTPPs)
Graduate Nurse Transition Programs (GNTPs)
Responsibilities (RS),
Roles (RO),
Relationships (RL),
Knowledge (KN).

References

1. Baharum H, Ismail A, McKenna L, Mohamed Z, Ibrahim R, Hassan NH. Success factors in adaptation of newly graduated nurses: a scoping review. BMC nursing. 2023; 22:125.
2. Edwards D, Carrier J, Hawker C. Effectiveness of strategies and interventions aiming to assist the transition from student to newly qualified nurse: an update systematic review protocol. JBI Evidence Synthesis. 2019; 17:157-63.
3. Aggar C, Bloomfield J, Thomas TH, Gordon CJ. Australia’s first transition to professional practice in primary care program for graduate registered nurses: A pilot study. BMC nursing. 2017; 16:1-11.
4. Hallaran AJ, Edge DS, Almost J, Tregunno D. New nurses’ perceptions on transition to practice: A thematic analysis. Canadian Journal of Nursing Research. 2023; 55:126-36.
5. Koh CSL, Ong KK, Tan MML, Mordiffi SZ. Evaluation of a graduate nurse residency program: A retrospective longitudinal study. Nurse Education Today. 2023; 126:105801.
6. Yıldız CÇ, Ergün Y. Transition experiences of newly graduated nurses. Clinical and Experimental Health Sciences. 2020; 10:113-9.
7. Kumaran S, Carney M. Role transition from student nurse to staff nurse: Facilitating the transition period. Nurse education in practice. 2014; 14:605-11.
8. Duchscher JEB. Transition shock: The initial stage of role adaptation for newly graduated registered nurses. Journal of advanced nursing. 2009; 65:1103-13.
9. Kreedi F, Brown M, Marsh L, Rogers K. Newly Graduate Registered Nurses’ Experiences of transition to clinical practice: a systematic review. American Journal of Nursing Research. 2021; 9:94-105.
10. Rush KL, Janke R, Duchscher JE, Phillips R, Kaur S. Best practices of formal new graduate transition programs: An integrative review. International journal of nursing studies. 2019; 94:139-58.
11. Walker A, Campbell K. Work readiness of graduate nurses and the impact on job satisfaction, work engagement and intention to remain. Nurse Education Today. 2013; 33:1490-5.
12. Morphet J, Kent B, Plummer V, Considine J. The effect of Transition to Specialty Practice Programs on Australian emergency nurses’ professional development, recruitment and retention. Australasian Emergency Nursing Journal. 2015; 18:204-11.
13. Kenny A, Dickson-Swift V, McKenna L, Charette M, Rush KL, Stacey G, et al. Interventions to support graduate nurse transition to practice and associated outcomes: A systematic review. Nurse Education Today. 2021; 100:104860.
14. Jangland E, Gunningberg L, Nyholm L. A mentoring programme to meet newly graduated nurses’ needs and give senior nurses a new career opportunity: A multiple-case study. Nurse education in practice. 2021; 57:103233.
15. Keshk LI, Mersal FA. Assessment of graduate nurses entry level competencies: Expectations of faculty members versus nurse managers. American Journal of Nursing Research. 2017; 5:1-12.
16. Phillips C, Kenny A, Esterman A, Smith C. A secondary data analysis examining the needs of graduate nurses in their transition to a new role. Nurse education in practice. 2014; 14:106-11.
17. Rush KL, Adamack M, Gordon J, Lilly M, Janke R. Best practices of formal new graduate nurse transition programs: An integrative review. International journal of nursing studies. 2013; 50:345-56.
18. Hallaran AJ, Edge DS, Almost J, Tregunno D. New registered nurse transition to the workforce and intention to leave: Testing a theoretical model. Canadian Journal of Nursing Research. 2021; 53:384-96.

19. Weller-Newton JM, Murray M, Phillips C, Laging B, McGillion A. Transition to practice programs in nursing: a rapid review. *The Journal of Continuing Education in Nursing*. 2022; 53:442-50.
20. Kaihlanen A-M, Elovainio M, Haavisto E, Salminen L, Sinervo T. Final clinical practicum, transition experience and turnover intentions among newly graduated nurses: A cross sectional study. *Nurse Education Today*. 2020; 84:104245.
21. Bratt MM, Felzer HM. Predictors of new graduate nurses' organizational commitment during a nurse residency program. *Journal for nurses in professional development*. 2012; 28:108-19.
22. Taylor C, Foster J. The experiences of new graduate nurses working in a pediatric setting: A qualitative systematic review. *Journal of pediatric nursing*. 2022; 67:e234-e48.
23. Duchscher JB. A process of becoming: The stages of new nursing graduate professional role transition. *The Journal of Continuing Education in Nursing*. 2008; 39:441-50.
24. Cusack L, Madsen L, Duchscher JB, You W. Does transition theory matter?: A descriptive study of a transition program in Australia based on duchscher's stages of transition theory and transition shock model. *The Australian Journal of Advanced Nursing*. 2024; 41:33-41.
25. Duchscher JB. From surviving to thriving: Navigating the first year of professional nursing practice: Nursing the future; 2012.
26. Pasila K, Elo S, Kääriäinen M. Newly graduated nurses' orientation experiences: A systematic review of qualitative studies. *International journal of nursing studies*. 2017; 71:17-27.
27. Edwards D, Hawker C, Carrier J, Rees C. A systematic review of the effectiveness of strategies and interventions to improve the transition from student to newly qualified nurse. *International journal of nursing studies*. 2015; 52:1254-68.
28. Hussein R, Everett B, Ramjan LM, Hu W, Salamonson Y. New graduate nurses' experiences in a clinical specialty: A follow up study of newcomer perceptions of transitional support. *BMC nursing*. 2017; 16:1-9.
29. Rochester S, Kilstoff K, Scott G. Learning from success: Improving undergraduate education through understanding the capabilities of successful nurse graduates. *Nurse Education Today*. 2005; 25:181-8.
30. Scott G, Chang E, Grebennikov L. Using successful graduates to improve the quality of undergraduate nursing programs. *Journal of Teaching and Learning for Graduate Employability*. 2010; 1:26-44.
31. Charette M, McKenna L, McGillion A, Burke S. Effectiveness of transition programs on new graduate nurses' clinical competence, job satisfaction and perceptions of support: A mixed-methods study. *Journal of clinical nursing*. 2023; 32:1354-69.
32. Labrague L, McEnroe-Petitte D. Job stress in new nurses during the transition period: an integrative review. *International nursing review*. 2018; 65:491-504.
33. Erickson SK. Mentorship programs and the novice nurse: a rapid evidence assessment: University of British Columbia; 2015.
34. Vidal J-AM, Olley R. Systematic literature review of the effects of clinical mentoring on new graduate registered nurses' clinical performance, job satisfaction and job retention. *Asia pacific journal of health management*. 2021; 16:70-82.
35. Thompson TC. Characteristics of Successful Nurse Mentors and Potential Effects On The Retention And Job Satisfaction Of New Graduate Nurses: An Integrative Review. 2021.
36. Eklund A, Sterner A, Nilsson MS, Larsman P. The impact of transition programs on well-being, experiences of work environment and turnover intention among early career hospital nurses. *Work*. 2025; 80:1960-8.
37. Martin C. The theory of critical thinking of nursing. *Nursing education perspectives*. 2002; 23:243-7.
38. Epstein M, Söderström M, Jirwe M, Tucker P, Dahlgren A. Sleep and fatigue in newly graduated nurses—Experiences and strategies for handling shiftwork. *Journal of clinical nursing*. 2020; 29:184-94.
39. Hunter K, Cook C. Role-modelling and the hidden curriculum: New graduate nurses' professional socialisation. *Journal of clinical nursing*. 2018; 27:3157-70.
40. Whitehead B, Owen P, Henshaw L, Beddingham E, Simmons M. Supporting newly qualified nurse transition: A case study in a UK hospital. *Nurse education today*. 2016; 36:58-63.
41. Miller CM, Meyer K, Riemann LA, Carter BT, Brant JM. Transition into practice: outcomes of a nurse residency program. *The Journal of Continuing Education in Nursing*. 2023; 54:32-9.

42. Parker V, Giles M, Lantry G, McMillan M. New graduate nurses' experiences in their first year of practice. *Nurse education today*. 2014; 34:150-6.
43. Stacey G, Cook G, Aubeeluck A, Stranks B, Long L, Krepa M, et al. The implementation of resilience based clinical supervision to support transition to practice in newly qualified healthcare professionals. *Nurse Education Today*. 2020; 94:104564.
44. Rogers S, Redley B, Rawson H. Developing work readiness in graduate nurses undertaking transition to practice programs: An integrative review. *Nurse Education Today*. 2021; 105:105034.

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