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Development of Undergraduate Nursing Students' Clinical Performance Self-Efficacy Beliefs: A Cross-Sectional Study

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Abstract

Self-efficacy is a person's belief in their ability to perform a task effectively despite difficulties and predicts future willingness to undertake similar tasks. The study's aim was to determine the extent to which undergraduate nursing students develop their clinical performance self-efficacy beliefs throughout their degree. Using a cross-sectional survey design, Year 1, 2 and 3 students from a three-year undergraduate nursing program completed a clinical performance self-efficacy scale, comprising the domains of assessment, planning, implementation and evaluation. Welch's one-way ANOVA and Games–Howell post hoc analyses compared self-efficacy scores across year levels. Self-efficacy predictors were identified with multiple linear regression. Descriptive statistics determined students' confidence with clinical activities. Participants' self-efficacy scores increased significantly from Year 1 to 2 and Year 2 to 3. Year level of study was the only unique positive predictor of scores. Over the years, participants were most confident implementing care and least confident planning and evaluating care. Given that clinical placement frequency was not a unique significant predictor of self-efficacy, but rather weakly correlated, future studies should examine if other learning activities such as high-fidelity simulation may play a greater role in its development. The lower confidence with planning and evaluation underscores the need for curricula that scaffold higher-order skills like critical thinking and reflection.

Keywords: clinical performance; confidence; nursing; self-efficacy; undergraduate

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1. Introduction

Graduating nursing students must effectively and safely perform a range of clinical activities aligned with professional nursing standards and codes (World Health Organization, 2020). Successful performance of clinical activities requires nursing students to have strong self-efficacy beliefs, developed during their undergraduate study (Mohamadirizi et al., 2015; Shorey & Lopez, 2021). Self-efficacy refers to a person's belief about their capability to perform a task and achieve a desired outcome, even when faced with difficulties (Bandura, 1997). Conceptualized by psychologist Bandura (1997) and integrated within Social Cognitive Theory, self-efficacy is a situation-specific form of confidence, which impacts a person's motivation, persistence and behavior. People with strong self-efficacy beliefs are willing to attempt a task, persevere with that task even when challenged, and are consequently more likely to master the task than those with a lower sense of self-efficacy. Those with strong self-efficacy beliefs

are also more motivated to undertake that task again in the future (Bandura, 1997). People with diminished self-efficacy beliefs doubt their abilities and tend to avoid or abandon tasks they deem challenging. This impacts their immediate success and their willingness to engage with the same or similar activities in the future (Bandura, 1997).

Research suggests that nursing students' self-efficacy beliefs positively influence a range of behaviors and traits related to clinical activities. These include critical thinking, clinical competence and practice readiness (Ersoy & Ayaz-Alkaya, 2024; Nguyen et al., 2023; Yao et al., 2021). In the Philippines, Gangoso et al. (2022) determined that nursing students' self-efficacy with clinical tasks had a positive effect on their critical thinking abilities and mediated the relationship between students' critical thinking ability and their perceptions of clinical placement experiences. In China, Yu et al. (2021) found a positive relationship between nursing students' self-efficacy in managing clinical situations and their ability to provide safe nursing care. In Iran, Abdal et al. (2015) found that nursing students' self-efficacy beliefs positively impacted their autonomy in professional practice, competence with clinical activities and their intention to engage with ongoing professional development.

While supporting undergraduate students to develop their self-efficacy beliefs is an important role of university educators, research suggests that the self-efficacy beliefs of students may remain unchanged during their degree (Liu et al., 2023; Shorey & Lopez, 2021). In 2021, Liu et al. (2023) examined the self-efficacy belief trajectory of 2473 Chinese college students across 15 disciplinary fields. Less than 10% of students experienced self-efficacy gains during their four-year degrees, with most experiencing self-efficacy 'stability'.

According to Bandura (1997), the development of one's self-efficacy beliefs arises from four principal sources. The first and most powerful source, enactive mastery experiences, involves repeated effortful attempts at a task until a person is proficient. The second source, vicarious experiences, requires observation of another person successfully performing a task. Verbal persuasion, the third source, involves the receipt of encouragement and positive feedback from people perceived as credible and knowledgeable. The final source, physiological and emotional states, arises when individuals attempt a task in a psychologically safe setting, free from stressors and negative arousers.

Research indicates that nursing curricula, with their combination of theoretical learning, clinical simulations and clinical placement experiences, present ideal opportunities for students to engage with the four self-efficacy sources and develop their self-efficacy beliefs (Shorey & Lopez, 2021). Despite this, little research is published on the development of undergraduate nursing students' self-efficacy beliefs at various stages of their degree, particularly in relation to clinical performance.

Addressing this gap, the objective of this study was to determine the extent to which undergraduate nursing students develop their clinical performance self-efficacy in their degree, using a validated instrument with four clinical performance self-efficacy dimensions (assessment, planning, implementation and evaluation). The research questions were as follows:

1. Do nursing students' clinical performance self-efficacy beliefs differ by year level of their undergraduate degree?
2. What are the predictors of nursing students' clinical performance self-efficacy?
3. How confident are nursing students with each clinical performance self-efficacy domain (assessment, planning, implementation and evaluation) and their associated clinical activities?

The results of this research are particularly relevant to nurse educators, who wish to evaluate and compare the effectiveness of learning activities and program initiatives from a self-efficacy perspective, using validated methods.

2. Materials and Methods

2.1. Study Design

This research involved a cross-sectional survey design, informed by self-efficacy theory (Bandura, 1997). We hypothesized that students' clinical performance self-efficacy could be influenced by four sources—enactive mastery experiences, vicarious experiences, verbal persuasion and physiological/emotional states (Bandura, 1997)—and measured using a validated self-efficacy instrument tailored to clinical activities. This study was part of a multi-phase research project, which also investigated the psychometric properties of self-efficacy instruments. While a small amount of data spanned the various research phases (e.g., some demographic characteristics and total self-efficacy score), outcomes from each phase were reported in separate manuscripts due to the volume of collected data and the different aims of each phase.

2.2. Participants and Setting

Participants were recruited from all year levels of a three-year multi-campus undergraduate nursing program in Queensland, Australia. The program included a constructivist curriculum, whereby students engaged with increasingly complex theoretical concepts and more frequent (and longer) clinical placement experiences as the program progressed. Students also participated in increasingly sophisticated clinical simulations, beginning in Year 1 with low-fidelity simulations and transitioning to high-fidelity immersive simulations in Years 2 and 3. The program included various entry pathways, including entry into Year 1 (e.g., high school graduates) and Year 2 (e.g., those with credits from prior degrees, internationally qualified nurses or enrolled/practical nurses). Approximately 330 participants were sought to achieve a 95% confidence interval (Raosoft, 2004).

2.3. Instrument

Participants completed a modified version of Cheraghi et al.'s (2009) Self-efficacy in Clinical Performance Scale (M-SECP), which included 33 items related to clinical activities. Based on exploratory factor analysis of the original scale and expert review of the modified version (E. Pierce, 2024), items were arranged in four dimensions: assessment (collecting and interpreting patient data), planning (developing a plan to meet patient needs), implementation (executing the plan), and evaluation (assessing the outcomes). These reflect stages of the nursing process underpinned by Orlando's (1961) Deliberative Nursing Process Theory and utilized in professional nursing standards in Australia, the United States and the United Kingdom (American Nursing Association, 2022; Nursing and Midwifery Board of Australia, 2016; Nursing and Midwifery Council, 2018). Both the original and modified scales demonstrated excellent reliability, with Cronbach's alphas of 0.96 and 0.98, respectively (Cheraghi et al., 2009; E. Pierce, 2024).

2.4. Ethical Approval

The authors' university Human Research Ethics Committee granted ethics approval (HREC number 2022/373; 13 June 2022).

2.5. Data Collection

During face-to-face classes in August and September 2022, a research team member approached potential participants and provided a verbal and written explanation of the study's purpose, design, participant requirements and ethical implications. This person did not have a power relationship with students. A statement in the Participant Information Sheet indicated that survey completion implied informed consent. Participants took 10–15 min to complete the anonymous paper surveys and returned them to a secure box,

accessible only by the research team. Students could choose to return a blank survey if they did not wish to participate.

2.6. Data Analysis

Survey data were uploaded into SPSS 28.0 and checked for missing values and normality. Surveys with missing M-SECP data were excluded; those with missing demographic data but complete M-SECP data were retained. Demographic comparisons between excluded and included participants were not conducted, as excluded surveys constituted a small proportion of responses and were removed based on M-SECP completeness. Furthermore, patterns of incomplete data did not cluster around a single year level or demographic variable. Normality was confirmed using skewness and kurtosis values within accepted ranges (±1) (Hair et al., 2019), supporting the use of parametric tests. Descriptive statistics were generated for demographic characteristics and M-SECP total and dimension scores. To compare scores on a standard 0–10 scale, M-SECP total and dimension scores were divided by the number of items in the scale or dimension to produce a converted mean (M_{conv}). While Cheraghi et al. (2009) specified that a score of zero indicated no confidence/self-efficacy and 10 was the highest level of confidence/self-efficacy, they did not designate confidence/self-efficacy ranges within the 0–10 scale. Accordingly, we applied author-defined heuristic categories for interpretive purposes only, using the term 'low confidence/self-efficacy' for scores of 0–2, 'moderate confidence/self-efficacy' for scores of 3–7 and 'high confidence/self-efficacy' for scores of 8–10.

To identify whether nursing students' clinical performance self-efficacy beliefs differ by year level (research question 1), M-SECP total and dimension scores were compared for Year 1, 2 and 3 samples using Welch's one-way ANOVA and Games–Howell post hoc tests (as assumptions of variances were violated) (Field, 2018). Cohen's *d* identified the magnitude of group differences through Games–Howell post hoc comparisons as small = 0.2, medium = 0.5 or large = 0.8 (Cohen, 1988). A multiple linear regression model was produced to identify demographic characteristics (age, gender, year level, clinical placement experiences, previous tertiary degree/diploma, and healthcare experience) that uniquely predicted the total sample's M-SECP scores (research question 2). Pearson's product–moment correlation identified correlations. To identify the level of confidence that nursing students had with the four clinical performance dimensions and their associated clinical activities (research question 3), item response frequencies, converted means and item means were calculated.

3. Results

3.1. Demographics

A total of 534 participants completed the survey (response rate of 33.6%). Of these, 22 surveys (4.1%) were excluded due to missing data, resulting in 512 surveys being included in the final analysis. Participants were mostly females (84.6%) and had completed at least one clinical placement experience (55.8%). One-third of all participants had a previous tertiary degree or diploma (36.8%) and/or healthcare experience outside of university (34.1%) (Table 1).

Table 1. Participant demographics.

Characteristic	Total Sample (n = 512)		Year 1 Sample (n = 193)		Year 2 Sample (n = 183)		Year 3 Sample (n = 136)	
	M (*SD*)	*n* (%)	*M* (*SD*)	*n* (%)	*M* (*SD*)	*n* (%)	*M* (*SD*)	*n* (%)
Age	24.8 (7.5)		22.7 (6.3)		25.1 (7.4)		27.4 (8.4)	
Gender								
Female		433 (84.6)		156 (80.8)		164 (89.6)		113 (83.1)
Male		74 (14.5)		35 (18.1)		19 (10.4)		20 (14.7)
Other/Prefer not to say		4 (0.8)		1 (0.5)		0 (0.0)		3 (2.2)
Clinical placement experience								
0 clinical placements		223 (43.6)		189 (97.9)		34 (18.6)		0 (0.0)
1 clinical placement		152 (29.7)		4 (2.1)		148 (80.9)		0 (0.0)
2–5 clinical placements		11 (2.1)		0 (0.0)		0 (0.0)		11 (8.1)
6 or more clinical placements		123 (24.0)		0 (0.0)		0 (0.0)		123 (90.4)
Previous degree or diploma		189 (36.8)		55 (28.5)		74 (40.4)		60 (44.1)
Healthcare experience		175 (34.1)		54 (28)		77 (42.1)		44 (32.4)

3.2. Clinical Performance Self-Efficacy Across Year Levels

The converted mean total scores of Year 1 (M_{conv} = 6.4), Year 2 (M_{conv} = 7.3) and Year 3 (M_{conv} = 7.8) samples indicated that participants' clinical performance self-efficacy was in a moderate range based on author-defined heuristic categories (Table 2).

Table 2. Participants' clinical performance self-efficacy scores by year level and dimension.

						Year Level Comparisons		
	Sample	***n***	***M* (*SD*)**	***Range***	***Converted M* (/10)**	**Pairwise Comparison (Games–Howell)**	***p***	***Cohen's d***
Total Score (max = 330)	Year 1	193	212.6 (53.5)	23–330	6.4	Year 1–2	<0.001 *	0.60
	Year 2	183	242.3 (43.9)	136–330	7.3	Year 2–3	0.013 *	0.32
	Year 3	136	256.2 (41.9)	151–330	7.8			
Dimension 1: Assessment (max = 110)	Year 1	193	69.6 (18.6)	0–110	6.3	Year 1–2	<0.001 *	0.65
	Year 2	183	80.6 (15.1)	44–110	7.3	Year 2–3	0.049 *	0.27
	Year 3	136	84.6 (15.0)	46–110	7.7			
Dimension 2: Planning (max = 60)	Year 1	193	38.5 (11.2)	0–60	6.4	Year 1–2	0.001 *	0.36
	Year 2	183	42.3 (9.5)	19–60	7.1	Year 2–3	0.009 *	0.33
	Year 3	136	45.3 (8.5)	24–60	7.6			
Dimension 3: Implementation (max = 100)	Year 1	193	67.5 (16.2)	10–100	6.8	Year 1–2	<0.001 *	0.64
	Year 2	183	77.0 (13.1)	41–100	7.7	Year 2–3	0.024 *	0.30
	Year 3	136	80.8 (12.9)	47–100	8.1			
Dimension 4: Evaluation (max = 60)	Year 1	193	37.0 (11.2)	0–60	6.2	Year 1–2	<0.001 *	0.53
	Year 2	183	42.5 (9.6)	13–60	7.1	Year 2–3	0.014 *	0.32
	Year 3	136	45.5 (8.9)	24–60	7.9			

Legend: * statistically significant at $p < 0.05$.

Welch's one-way ANOVA indicated a significant effect of year level on converted mean total self-efficacy scores, $F_{Welch}(2, 329.64) = 35.21$, $p < 0.001$. Games–Howell post hoc comparisons demonstrated that Year 1 participants had significantly lower converted mean total scores than Year 2 participants ($p < 0.001$), with a moderate effect size (Cohen's $d = 0.60$). Year 1 participants also reported significantly lower scores than Year 3 participants ($p < 0.001$), with a large effect size. In addition, Year 2 participants reported significantly lower converted mean total scores than Year 3 participants ($p = 0.013$), although the magnitude of this difference was small (Cohen's $d = 0.32$).

Significant year-level differences were also observed across all clinical performance dimensions. Welch's ANOVA demonstrated significant effects for assessment, $F_{Welch}(2, 327.23) = 34.80$, $p < 0.001$; planning, $F_{Welch}(2, 332.10) = 19.48$, $p < 0.001$; implementation, $F_{Welch}(2, 328.10) = 36.05$, $p < 0.001$; and evaluation, $F_{Welch}(2, 330.58) = 29.70$, $p < 0.001$.

Games–Howell post hoc analyses indicated that Year 1 participants reported significantly lower self-efficacy than Year 2 participants in assessment ($p < 0.001$), planning ($p = 0.001$), implementation ($p < 0.001$), and evaluation ($p < 0.001$). Effect sizes were moderate across dimensions, except for planning, which demonstrated a small effect size (Cohen's $d = 0.36$).

Further Games–Howell comparisons revealed that Year 2 participants reported significantly lower self-efficacy than Year 3 participants in assessment ($p = 0.049$), planning ($p = 0.009$), implementation ($p = 0.024$), and evaluation ($p = 0.014$). The magnitude of these differences was consistently small, as reflected by Cohen's d values (Table 2).

3.3. Predictors of Clinical Performance Self-Efficacy

For the total sample, participants' year level of study was a unique significant positive predictor of total self-efficacy scores ($\beta = 0.52$, $t = 5.10$, $p < 0.001$). The demographic characteristics of age ($\beta = -0.01$, $t = -0.19$, $p = 0.853$), gender ($\beta = 0.04$, $t = 0.90$, $p = 0.369$), clinical placement experience ($\beta = -0.19$, $t = -1.81$, $p = 0.070$), previous degree or diploma ($\beta = -0.01$, $t = -0.24$, $p = 0.814$) and healthcare experience ($\beta = -0.03$, $t = -0.60$, $p = 0.546$) did not uniquely predict participants' total self-efficacy scores. There was, however, a significant weak positive correlation between clinical placement experience and total self-efficacy scores ($r = 0.28$, $n = 509$, $p < 0.001$) and a very weak positive correlation between age and total self-efficacy scores ($r = 0.09$, $n = 487$, $p = 0.049$).

3.4. Self-Efficacy in Assessment, Planning, Implementation and Evaluation

Based on converted means, Year 1 participants rated their self-efficacy to implement care highest of the four dimensions and their self-efficacy in evaluation was the lowest (Table 2). Year 2 participants also rated their self-efficacy in implementation the highest; their self-efficacy in planning and evaluation were equally the lowest. Year 3 participants rated their self-efficacy with implementation the highest and their self-efficacy in planning the lowest of the four dimensions.

3.4.1. Assessment

For all assessment-related clinical activities, Year 1 participants' confidence (based on mean item scores) was lower than Year 2 and Year 3 participants' confidence (Table 3). Compared to Year 1 participants, a greater proportion of Year 2 and 3 participants had moderate or higher confidence with assessment-related activities. Only one Year 2 participant (0.5%) and no Year 3 participants (0.0%) rated their confidence in assessment-related clinical activities as low.

Year 1 participants were most confident in their abilities to collect subjective data related to a patients' health condition (item 5) and least confident that they could analyze collected data (item 8). Year 2 participants were equally most confident in their abilities to document collected data (item 7) and identify a patient's health concerns (item 10). They were least confident that they could analyze data (item 8). Year 3 participants were most confident in their abilities to document collected data (item 7) and least confident that they could identify relationships amongst collected data (item 6).

Table 3. Nursing students' confidence with assessment-related clinical activities (Dimension 1).

		Confidence Level			
Assessment-Related Clinical Activity	**Sample**	**Low, *n* (%)**	**Moderate, *n* (%)**	**High, *n* (%)**	***M* (/10)**
Collect patient data through a physical assessment	Year 1	13 (6.7%)	144 (74.6%)	43 (22.3%)	6.26
	Year 2	0 (0.0%)	92 (50.3%)	91 (49.7%)	7.33
	Year 3	0 (0.0%)	56 (41.2%)	80 (58.8%)	7.92
Collect relevant patient data by taking a health history	Year 1	11 (5.7%)	125 (64.8%)	62 (32.1%)	6.46
	Year 2	0 (0.0%)	92 (50.3%)	91 (49.7%)	7.29
	Year 3	0 (0.0%)	64 (47.0%)	72 (52.9%)	7.65
Collect patient data by organizing my available time	Year 1	19 (9.8%)	135 (69.9%)	52 (26.9%)	6.22
	Year 2	0 (0.0%)	84 (45.9%)	99 (54.1%)	7.41
	Year 3	0 (0.0%)	61 (44.9%)	75 (55.1%)	7.68
Collect objective data related to a patient's health condition	Year 1	12 (6.2%)	135 (69.9%)	55 (28.5%)	6.48
	Year 2	0 (0.0%)	84 (45.9%)	99 (54.1%)	7.45
	Year 3	0 (0.0%)	49 (36.0%)	87 (64.0%)	7.95
Collect subjective data related to a patient's health condition	Year 1	9 (4.7%)	125 (64.8%)	64 (33.2%)	6.67 *
	Year 2	0 (0.0%)	84 (45.9%)	99 (54.1%)	7.46
	Year 3	0 (0.0%)	55 (40.4%)	81 (59.6%)	7.87
See the relationships among pieces of data that were collected from a variety of sources	Year 1	16 (8.3%)	136 (70.5%)	53 (27.5%)	6.24
	Year 2	1 (0.5%)	113 (61.7%)	69 (37.7%)	6.96
	Year 3	0 (0.0%)	74 (54.4%)	62 (45.6%)	7.24 ^
Document collected data based on a patient's health condition	Year 1	14 (7.3%)	137 (71.0%)	51 (26.4%)	6.29
	Year 2	0 (0.0%)	80 (43.8%)	103 (56.3%)	7.58 *
	Year 3	0 (0.0%)	50 (36.7%)	86 (63.3%)	7.99 *
Analyze collected data based on a patient's health condition	Year 1	20 (10.4%)	137 (71.0%)	44 (22.8%)	5.95 ^
	Year 2	0 (0.0%)	110 (60.1%)	73 (39.9%)	6.86 ^
	Year 3	0 (0.0%)	72 (52.9%)	64 (47.1%)	7.38
Identify a patient's strengths in the care process	Year 1	16 (8.3%)	140 (72.5%)	47 (24.4%)	6.18
	Year 2	0 (0.0%)	99 (54.1%)	84 (45.9%)	7.19
	Year 3	0 (0.0%)	75 (55.1%)	61 (44.9%)	7.32
Identify a patient's health concerns in the care process	Year 1	11 (5.7%)	123 (63.7%)	63 (32.6%)	6.50
	Year 2	0 (0.0%)	81 (44.3%)	102 (55.8%)	7.58 *
	Year 3	0 (0.0%)	63 (46.3%)	73 (53.7%)	7.76
Set priorities based on a patient's health condition	Year 1	15 (7.8%)	129 (66.8%)	57 (29.5%)	6.37
	Year 2	0 (0.0%)	84 (45.9%)	99 (54.1%)	7.44
	Year 3	0 (0.0%)	54 (39.7%)	82 (60.3%)	7.84

Legend: Low = scores 0–2; Moderate = scores 3–7; High = scores 8–10 (author-defined heuristic categories); * highest mean score for year-level sample; ^ lowest mean score for year-level sample.

3.4.2. Planning

Year 1 participants' mean item scores for planning-related items were lower than Year 2 and Year 3 participants' scores (Table 4). The proportion of Year 2 and 3 participants with moderate or high planning-related confidence levels was greater than Year 1 participants.

Year 1 participants were most confident in their abilities to create short-term goals for a patient's care plan (item 13) and least confident that they could formulate measurable outcomes based on a patient's goals (item 15). Year 2 and 3 participants were most confident that they could develop a daily patient care plan based on either established priorities (item 16) or goals (item 17); both were least confident that they could formulate long-term goals for a patient's care plan (item 14).

Table 4. Nursing students' confidence with planning-related clinical activities (Dimension 2).

		Confidence Level			
Planning-Related Clinical Activity	**Sample**	**Low, *n* (%)**	**Moderate, *n* (%)**	**High, *n* (%)**	***M* (/10)**
Formulate the overall goals for a patient's care plan	Year 1	7 (3.6%)	118 (61.1%)	68 (35.2%)	6.47
	Year 2	1 (0.5%)	104 (56.8%)	78 (42.6%)	6.96
	Year 3	0 (0.0%)	68 (50.0%)	68 (50.0%)	7.54
Formulate short-term goals for a patient's care plan	Year 1	7 (3.6%)	118 (61.1%)	68 (35.2%)	6.53 *
	Year 2	1 (0.5%)	95 (51.9%)	87 (47.5%)	7.15
	Year 3	0 (0.0%)	60 (44.1%)	76 (55.9%)	7.69
Formulate long-term goals for a patient's care plan	Year 1	7 (3.6%)	122 (63.2%)	64 (33.2%)	6.32
	Year 2	1 (0.5%)	118 (64.5%)	64 (35.0%)	6.74 ^
	Year 3	0 (0.0%)	74 (54.4%)	62 (45.6%)	7.24 ^
Formulate measurable outcomes based on goals	Year 1	8 (4.1%)	130 (67.4%)	55 (28.5%)	6.33 ^
	Year 2	1 (0.5%)	118 (64.5%)	64 (35.0%)	6.79
	Year 3	0 (0.0%)	73 (53.7%)	63 (46.3%)	7.35
Develop a patient's daily care plan based on goals	Year 1	8 (4.1%)	127 (65.8%)	58 (30.1%)	6.40
	Year 2	0 (0.0%)	95 (51.9%)	88 (48.1%)	7.26
	Year 3	0 (0.0%)	53 (39.0%)	83 (61.0%)	7.74 *
Develop a patient's daily care plan based on set priorities	Year 1	8 (4.1%)	121 (62.7%)	64 (33.2%)	6.41
	Year 2	0 (0.0%)	89 (48.6%)	94 (51.4%)	7.34 *
	Year 3	0 (0.0%)	56 (41.2%)	80 (58.8%)	7.71

Legend: Low = scores 0–2; Moderate = scores 3–7; High = scores 8–10 (author-defined heuristic categories); * highest mean score for year-level sample; ^ lowest mean score for year-level sample; M = Mean.

3.4.3. Implementation

For all implementation-related clinical activities, Year 1 participants' mean item confidence scores were lower than those of Year 2 and Year 3 participants (Table 5). Compared to Year 1 participants, more Year 2 and 3 participants had moderate or higher confidence levels with implementation tasks. Few Year 2 (0.0–2.7%) and Year 3 (0.0–0.7%) participants rated their confidence with implementation-related clinical activities as low.

Table 5. Nursing students' confidence with implementation-related clinical activities (Dimension 3).

		Confidence Level			
Implementation-Related Clinical Activity	**Sample**	**Low, *n* (%)**	**Moderate, *n* (%)**	**High, *n* (%)**	***M* (/10)**
Follow the direction of a patient's care plan to achieve goals	Year 1	5 (2.6%)	108 (56.0%)	80 (41.5%)	6.90
	Year 2	0 (0.0%)	72 (39.3%)	111 (60.7%)	7.63
	Year 3	0 (0.0%)	42 (30.9%)	94 (69.2%)	8.01
Take care of a patient based on set priorities	Year 1	4 (2.1%)	113 (58.5%)	76 (39.4%)	6.87
	Year 2	0 (0.0%)	62 (33.9%)	121 (66.1%)	7.91
	Year 3	0 (0.0%)	43 (31.6%)	93 (68.4%)	8.14
Carry out a patient's care plan based on available resources	Year 1	5 (2.5%)	116 (60.1%)	72 (37.3%)	6.65
	Year 2	0 (0.0%)	76 (41.4%)	107 (58.5%)	7.56
	Year 3	0 (0.0%)	41 (30.1%)	95 (69.9%)	8.04
Explain each nursing intervention to a patient or family member before carrying it out	Year 1	7 (3.6%)	110 (57.0%)	76 (39.4%)	6.57
	Year 2	1 (0.5%)	96 (52.5%)	86 (47.0%)	7.11
	Year 3	0 (0.0%)	53 (39.0%)	83 (61.0%)	7.96
Collaborate with a patient or family member in the implementation of a daily care plan	Year 1	5 (2.6%)	124 (64.2%)	64 (33.2%)	6.52
	Year 2	3 (1.6%)	95 (51.9%)	85 (46.4%)	7.10
	Year 3	0 (0.0%)	51 (37.5%)	85 (62.5%)	7.84
Make decisions based on my previous experiences in similar situations	Year 1	14 (7.3%)	114 (59.1%)	65 (33.7%)	6.18
	Year 2	1 (0.5%)	80 (43.7%)	102 (55.7%)	7.50
	Year 3	0 (0.0%)	53 (39.0%)	83 (61.0%)	7.81

Table 5. *Cont.*

		Confidence Level			
Implementation-Related Clinical Activity	**Sample**	**Low, *n* (%)**	**Moderate, *n* (%)**	**High, *n* (%)**	***M* (/10)**
Seek help from a mentor or staff in difficult situations	Year 1	2 (1.0%)	68 (35.2%)	123 (63.7%)	8.02 *
	Year 2	0 (0.0%)	31 (17.0%)	152 (83.1%)	8.85 *
	Year 3	0 (0.0%)	25 (18.4%)	111 (81.6%)	8.87 *
Improve my skills based on mentor and staff feedback	Year 1	0 (0.0%)	73 (37.8%)	120 (62.2%)	7.95
	Year 2	0 (0.0%)	33 (18.0%)	150 (82.0%)	8.81
	Year 3	0 (0.0%)	25 (18.4%)	111 (81.6%)	8.74
Design teaching strategies for discharge of a patient	Year 1	16 (8.3%)	134 (69.4%)	43 (22.3%)	5.67 ^
	Year 2	5 (2.7%)	111 (60.7%)	67 (36.6%)	6.58 ^
	Year 3	1 (0.7%)	64 (47.1%)	71 (52.2%)	7.21 ^
Document and report daily clinical work	Year 1	9 (4.7%)	124 (64.2%)	60 (31.1%)	6.21
	Year 2	1 (0.5%)	69 (37.7%)	113 (61.8%)	7.90
	Year 3	1 (0.7%)	40 (29.4%)	95 (69.9%)	8.21

Legend: Low = scores 0–2; Moderate = scores 3–7; High = scores 8–10 (author-defined heuristic categories); * highest mean score for year-level sample; ^ lowest mean score for year-level sample.

Year 1, 2 and 3 participants were most confident in their abilities to seek help from a mentor or staff member in difficult situations (item 24) and were least confident in their abilities to design teaching strategies that would support a patient's discharge from a health service (item 26).

3.4.4. Evaluation

Year 1 participants' mean scores for evaluation-related items were lower than the scores of Year 2 and 3 participants (Table 6). A greater proportion of Year 2 and 3 participants rated their confidence with implementation as moderate or high compared to Year 1 participants.

Table 6. Nursing students' confidence with evaluation-related clinical activities (Dimension 4).

		Confidence Level			
Evaluation-Related Clinical Activity	**Sample**	**Low, *n* (%)**	**Moderate, *n* (%)**	**High, *n* (%)**	***M* (/10)**
Evaluate whether a patient's desired outcomes were achieved	Year 1	6 (3.1%)	125 (64.8%)	62 (32.1%)	6.48 *
	Year 2	1 (0.5%)	86 (46.9%)	96 (52.5%)	7.41 *
	Year 3	0 (0.0%)	46 (33.8%)	90 (66.2%)	7.96 *
Evaluate how nursing interventions are carried out	Year 1	4 (2.1%)	136 (70.5%)	53 (27.5%)	6.33
	Year 2	1 (0.5%)	91 (49.7%)	91 (49.7%)	7.34
	Year 3	1 (0.7%)	46 (33.8%)	89 (65.4%)	7.79
Identify any points of breakdown in the steps of the nursing process	Year 1	7 (3.6%)	141 (73.1%)	45 (23.3%)	6.05
	Year 2	1 (0.5%)	113 (61.8%)	69 (37.7%)	6.89
	Year 3	0 (0.0%)	71 (52.2%)	65 (47.8%)	7.26 ^
Decide about continuing or modifying a care plan based on a patient's health status	Year 1	6 (3.1%)	133 (68.9%)	54 (28.0%)	6.17
	Year 2	1 (0.5%)	103 (56.3%)	79 (43.2%)	6.98
	Year 3	0 (0.0%)	68 (50.0%)	68 (50.0%)	7.46
Decide about changing expected outcomes based on a patient's health status	Year 1	8 (4.1%)	140 (72.5%)	45 (23.3%)	5.98 ^
	Year 2	3 (1.6%)	111 (60.7%)	69 (37.7%)	6.86 ^
	Year 3	0 (0.0%)	74 (54.4%)	62 (45.6%)	7.36
Decide about adjusting priorities based on a patient's health status	Year 1	7 (3.6%)	140 (72.5%)	46 (23.8%)	6.01
	Year 2	4 (2.1%)	97 (53.0%)	82 (44.9%)	7.05
	Year 3	0 (0.0%)	64 (47.1%)	72 (52.9%)	7.63

Legend: Low = scores 0–2; Moderate = scores 3–7; High = scores 8–10 (author-defined heuristic categories); * highest mean score for year-level sample; ^ lowest mean score for year-level sample.

Year 1, 2 and 3 participants were most confident in their abilities to evaluate whether a patient's desired outcomes were achieved (item 28). Year 1 and 2 participants were

least confident that they could modify expected outcomes based on a patient's health status (item 32), while Year 3 participants were least confident that they could identify breakdowns in the nursing process (item 30).

4. Discussion

This study addressed a gap in the literature by investigating the extent to which nursing students' clinical performance self-efficacy beliefs differ across year levels of an undergraduate program, from entry to exit points. In this research, Year 3 students' self-efficacy in clinical performance and its associated dimensions were significantly greater than those of Year 2 students, while Year 2 students' clinical performance was significantly greater than that of Year 1 students. Nursing students' self-efficacy beliefs related to assessment, planning, implementation and evaluation may strengthen as students engage with an increasingly complex constructivist curriculum; although there was a second-year entry pathway and the same cohort was not followed across the program, cohort effects may have influenced the results. These results reflect those of Pozam and Zaybak's (2022) Turkish study, which found that Year 4 nursing students had significantly higher levels of clinical performance self-efficacy compared to Year 2 and 3 students (Year 1 students were not studied). They attributed such differences to clinical experience and academic progression as students move through the latter years of their program.

In this study, the strength of differences in self-efficacy beliefs was strongest between Year 1 and 2 participants. At the time of data collection, most Year 1 students had not experienced a clinical placement, while 80% of Year 2 students had. While this raised the possibility that clinical placement experiences play a unique role in students' clinical performance self-efficacy development, results from the multiple linear regression suggested otherwise. The number of clinical placements with which students engaged was not a unique significant predictor of students' clinical performance self-efficacy beliefs (although it was weakly positively correlated); rather, year level was the *only* unique significant predictive factor. It is possible that other learning experiences or activities, which differ between year levels, may more strongly influence students' self-efficacy beliefs, but this would need to be examined in future research with a longitudinal design.

A growing body of research highlights the potential role of clinical simulation in developing nursing students' self-efficacy beliefs. In their Iranian study, Azizi et al. (2022) found that nursing students' self-efficacy beliefs were strengthened by repeated participation in a surgical nursing simulation and debrief. El-Hamid et al. (2021) similarly found that Egyptian nursing students' self-efficacy in preventing and managing post-partum hemorrhage was higher after using high-fidelity simulations. In the current study, it is possible that Year 2 students' participation in high-fidelity immersive simulation (versus low-fidelity simulation in Year 1) exposed them to the four self-efficacy sources proposed by Bandura (1997). High-fidelity immersive simulation provides opportunities for students to repeatedly assess, plan, implement and evaluate clinical activities (enactive mastery experiences), and observe peers and instructors perform these tasks (vicarious experiences) within a familiar 'low stakes' setting (physiological/emotional states) (Al Gharibi et al., 2021; Bandura, 1997). Simulation debriefing also facilitates the provision of constructive feedback to students from both instructors and peers (verbal persuasion) (Bandura, 1997; Fegran et al., 2023). While it is possible that other learning activities can provide similar exposure to self-efficacy sources, more research is needed to determine which of these play the greatest role in developing students' clinical performance self-efficacy.

In relation to the four clinical performance dimensions, Year 1, 2 and 3 participants rated their self-efficacy to implement care highest, while care planning and evaluation were rated lowest. This may reflect the greater emphasis many nursing students and

educators place on the execution of psychomotor skills rather than the reflective and critical thinking approaches that underpin safe effective nursing care (Gonzalez et al., 2021). In their ethnographic investigation of nursing students' socialization in practice, Ewertsson et al. (2017) found that Swedish students and nurse educators focused on the mechanics of nursing interventions, including approaches, materials and tools required for skill performance, rather than the reflective aspects of care. Korkut et al. (2021) attribute this focus to large student cohorts and heavy workloads for nurse educators that reduce the time spent with students on care planning and evaluation.

Care planning and evaluation require nursing students to analyze and interpret patient data, connect underlying knowledge, prioritize actions and reflect on the effectiveness of interventions over time (Levett-Jones et al., 2010). Confidence with higher-order thinking skills is often lacking in nursing students (Gonzalez et al., 2021), a phenomenon noted in this research with participants' individual item responses. In this study, participants' confidence with clinical tasks that involved data analysis and interpretation, patient education and long-term planning were rated lowest; tasks that involved immediate actions, like collecting subjective data, seeking help from others and documenting, were rated highest. This suggests a need to integrate learning activities within the nursing curriculum that bolster students' confidence/self-efficacy with higher-order thinking tasks. Şenocak et al. (2026) point to the positive correlation between self-efficacy and problem-solving in nursing students. Gonzalez et al. (2021) suggest that to enhance students' critical thinking skills and confidence, nurse educators should take a whole-curriculum approach, scaffolding critical thinking frameworks and intentional reflection throughout their programs. B. Pierce et al. (2024) also highlighted the need to integrate 'real-world' teaching opportunities, such as near-peer teaching, into nursing curricula to enhance students' self-efficacy in patient education and clinical teaching.

This research provides an initial understanding of nursing students' self-efficacy in clinical performance, and specifically their confidence with assessment, planning, implementation and evaluation, across the year levels of a nursing program. The differences in self-efficacy levels across year levels were statistically significant but modest (within two points on a 10-point scale and mostly falling at the mid-point of that scale). While this warrants cautious interpretation, this study does provide self-efficacy data to benchmark against, either in research or practice settings. Using the M-SECP instrument, which is aligned to professional nursing standards, this study provides a framework for nurse educators and educational policy makers to evaluate the effectiveness of learning activities with respect to students' self-efficacy in clinical performance across a program. Holistic, program-wide approaches to curriculum monitoring and enhancement are essential to produce safe graduates who have positive student experiences (T. van de Mortel et al., 2023). Understanding a nursing student's level of clinical performance self-efficacy provides valuable insight into areas where they lack confidence, enabling educators to design targeted learning and remediation activities that strengthen skills and support safe, competent practice (Hughes et al., 2024). While this paper includes suggestions for curricular activities that may support the development of nursing students' clinical performance self-efficacy (e.g., simulation and near-peer teaching), more research is required to explore the most effective strategies for enhancing nursing students' confidence with higher-order clinical activities across year levels and settings.

This research was restricted to a single Australian university, which limits the generalizability of results to other institutions and countries. The cross-sectional survey design meant that individual participants' self-efficacy beliefs were not examined over time; rather, year-level comparisons were made, which may have been influenced by cohort effects. Social desirability response bias was also possible (T. F. van de Mortel, 2008). Future re-

search might involve a longitudinal design and qualitative or mixed methods to extend the understanding of students' clinical performance self-efficacy beliefs as they transition through and beyond their degrees (B. Pierce et al., 2025).

5. Conclusions

Undergraduate nursing students' self-efficacy beliefs about clinical performance play a vital role in supporting their ongoing engagement in clinical activities. Despite this, little is known about students' clinical performance self-efficacy beliefs across all year levels of a nursing degree. This study addressed this under-researched topic and determined that nursing students' clinical performance self-efficacy beliefs, including their confidence with assessment, planning, implementation and evaluation, were higher as they progressed through an increasingly complex constructivist curriculum. Learning activities integrated within nursing programs should focus on developing students' confidence with higher-order thinking processes, to support effective care planning and evaluation. This research offers nurse educators a methodologically and theoretically sound means of assessing and comparing the effectiveness of curricula from a self-efficacy perspective.

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Abbreviations

The following abbreviations are used in this manuscript:

M	Mean
M-SECP	Modified Self-efficacy in Clinical Performance Scale

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