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Research article

Three paths to a Swedish nursing license: Two for internationally educated nurses and one for regular nursing students – A cross-sectional study of self-rated professional competence, self-efficacy, and thriving

D. Högstedt [a,*], I. Jansson [b], E. Eriksson [a,c], M. Engström [a]

[a] Faculty of Health and Occupational Studies, University of Gävle, Gävle, Sweden
[b] Institute of Health and Care Sciences, University of Gothenburg, Göteborg, Sweden
[c] Department of Public Health and Caring Sciences, Uppsala University, Uppsala, Sweden

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ABSTRACT

Background: Bridging programs are offered to support migrated nurses, but in some countries, nurses can also choose to validate their nursing competence. Thus far, little is known about how migrated nurses estimate their competence when they are about to enter working life in a new country and how this differs from regular nursing students.
Objective: To compare two groups of internationally educated nurses' – those from bridging programs and those who chose validation – and one group of regular nursing students' self-rated professional competence when they are about to start working as registered nurses. The hypotheses were: 1) internationally educated nurses rate their competence higher than regular nursing students and 2) those from bridging programs rate their competence higher than those who chose validation. In addition, the aim was to compare the groups' self-efficacy and thriving.
Design: A cross-sectional, comparative design.
Settings: Five universities in Sweden.
Participants: Nurses educated in non-European countries from a bridging program ($n = 128$, response rate 79.0 %) or validation process ($n = 61$, response rate 59.2 %) and students graduating from the regular nursing program ($n = 213$, response rate 68.3 %).
Methods: Data were collected with coded questionnaires (paper or online) between 2019 and 2021 and analyzed using non-parametric tests, e.g., Kruskal-Wallis.
Results: Both groups of internationally educated nurses had higher median scores on total nursing competence (both groups $p < 0.001$), general self-efficacy (bridging programs $p < 0.001$, validation $p = 0.020$), and total thriving (bridging programs $p < 0.001$, validation $p = 0.012$) than regular nursing students did. However, comparing the groups of internationally educated nurses showed no significant differences.
Conclusion: Internationally educated nurses rated their competence high but with differences within the groups for different competence areas. More research is needed to investigate whether the different paths are important for nurses' competence later in working life, and some of the competence areas might need extra attention when nurses start working.

1. Introduction

There is increasing international movement of nurses, and according to the World Health Organization (WHO) (2020), over 15 % of nurses in high-income countries were born or trained abroad. Around the world, nursing education programs vary in length and level, and nurses' roles can differ from one country to another (WHO, 2020). Internationally educated nurses (IENs) are usually required to validate their competence through board examinations and are sometimes also offered or required to complete some additional training, e.g., bridging programs (Xu and He, 2012). However, research has shown that IENs can feel like novices or that they lack sufficient competence in some areas when entering

* Corresponding author at: University of Gävle, 801 76 Gävle, Sweden.
E-mail address: denice.hogstedt@hig.se (D. Högstedt).

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working life as registered nurses (RNs) in a new country, and that these feelings differ in different contexts (Viken et al., 2018). Therefore, we were interested in how IENs who have taken different paths to a nursing license in a new country – a bridging program or validation – perceive their competence, self-efficacy, and thriving when they are about to enter working life as RNs in the new country. Although IENs are not newly graduated, they practice their profession in a context where they lack experience (Brunton and Cook, 2018) and they face both similar challenges as new graduates and additional challenges (Wheeler et al., 2013). Therefore, we were also interested in studying whether and how IENs' perceptions differ from the perceptions of regular nursing students who also are at the end of the licensure process.

2. Background

Nursing competence is "generally viewed as a complex integration of knowledge including professional judgment, skills, values and attitude" (Fukada, 2018, p.1), and is related to context (Fukada, 2018; Lejonqvist and Kajander-Unkuri, 2021). According to Benner's (1993) model 'From Novice to Expert,' there are five stages of clinical competence: Novice, Advanced beginner, Competent, Proficient, and Expert. These steps reflect a movement forward, each building on the previous one; competence thus increases with experience. However, according to the model, all nurses can regress and end up at the novice performance level if they are in a clinical setting where they lack experience and where the caring practice and goals are unfamiliar. A review by Viken et al. (2018) showed that IENs can go from clinical experts to cultural novices; they can experience uncertainty and, to some extent, insufficient knowledge in some areas. Another review (Chun Tie et al., 2018) showed that it can take years to adjust to an unfamiliar work environment and nursing practice. Moreover, an interview study of both IENs and new graduates (Wheeler et al., 2013) revealed that IENs faced similar challenges as new graduates, but also additional challenges due to, e.g., differences in culture and nursing practice. In contrast, IENs have described having better knowledge and practical skills than native nurses in some competence areas (Dahl et al., 2017). Studies of bridging programs have found that IENs can get help filling their cultural, practical, and theoretical gaps (Covell et al., 2018; Hadziabdic et al., 2021; Högstedt et al., 2021a) as well as gain confidence in clinical practice and increase their self-rated competence (Aggar et al., 2020).

Regarding RNs' self-rated nursing competence, i.e., not specifically for IENs, a systematic review (Lejonqvist and Kajander-Unkuri, 2021) found that nursing students and new graduates rated their competence as good. Also, that new graduates' competence level increased after three months of practice. It was also found that RNs' age, work experience, further education, and support were related to higher self-rated competence levels. For nursing students, clinical competence has been found to be related to general self-efficacy (Yu et al., 2021).

General self-efficacy is the general belief in one's ability to respond to difficult or demanding situations and to deal with obstacles (Schwarzer and Jerusalem, 1995). General self-efficacy has been shown to be related to problem-solving behavior (Zhao et al., 2015) and self-directed learning ability (Chen et al., 2019), both of which are thought to promote lifelong learning ability, which is essential for nurses in a knowledge-intensive area like healthcare. Learning, in turn, is one part of the psychological positive state of thriving, which occurs when an individual experiences both learning (acquiring and applying knowledge and skills) and vitality (having available energy) (Spreitzer et al., 2005). In the research, a sense of thriving at work has been associated with career development, better job performance and health (Porath et al., 2012), and for nurses with staying or not staying in the profession (Engström et al., 2021). Thus, both concepts – general self-efficacy and thriving – were of interest in our study.

In Sweden, IENs educated in countries outside the EU/EEA and Switzerland must obtain a Swedish nursing license before they start working as RNs. There are two paths (Fig. 1) to choose from. Interview studies have shown that both paths can be challenging, demanding, and stressful, however, those who had chosen validation described inadequate support and loneliness during the process (Högstedt et al., 2021b), while those attending a bridging program described good support and considerable learning during the process (Hadziabdic et al., 2021; Högstedt et al., 2021a). To our knowledge, no study has examined how IENs who have taken different paths to obtaining a nursing license in a new country estimate their professional competence, general self-efficacy, and thriving when they are about to enter working life as RNs, or whether and how these estimations differ from those made by regular nursing students. It could be assumed that IENs, given their previous experience as RNs, would perceive their competence as higher than regular nursing students (Lejonqvist and Kajander-Unkuri, 2021). However, IENs are novices in the new country's nursing context, and research has shown different results regarding their perception of competence when working in a new country (Dahl et al., 2017; Viken et al., 2018). Given the above-mentioned results from previous studies on bridging programs (e.g., Aggar et al., 2020; Covell et al., 2018), there is also a possibility that IENs who attend a bridging program would rate their competence higher than those who choose validation. Thus, the present study aimed to compare how two groups of IENs – those from bridging programs and those who choose validation – and one group of regular nursing students estimate their professional competence when they are about to start working as RNs. The hypotheses (H) were:

H1. IENs rate their professional competence higher than regular nursing students do.

H2. IENs from bridging programs rate their competence higher than those who chose validation.

In addition, the aim was to compare the three groups' self-efficacy

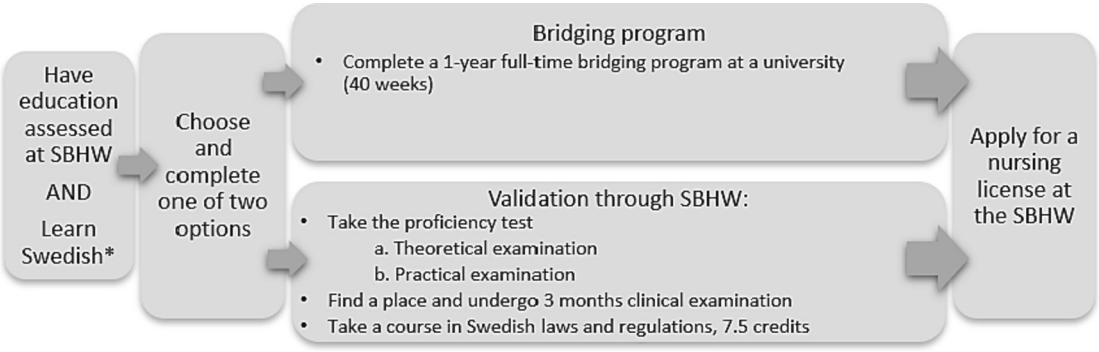

Fig. 1. Process of obtaining a Swedish nursing license for IENs trained in countries outside the EU/EEA and Switzerland.
*IENs who choose a bridging program must certify their language knowledge when they apply for the program, and IENs who choose validation can learn Swedish at any point in the process; they certify their language knowledge before applying for the license. SBHW = Swedish Board of Health and Welfare.

and thriving at the point when they are about to enter working life as RNs.

3. Methods

3.1. Design

A cross-sectional comparative design was used. The study is part of a longitudinal research project on IENs.

3.2. Setting

Working as an RN in Sweden requires a nursing license, which is obtained after a 3-year bachelor-level nursing program. Instead of attending the nursing program, nurses educated in a country outside the EU/EEA can choose between two paths to obtain a Swedish nursing license (Fig. 1): complete a 1-year full-time bridging program or complete a validation process involving a proficiency test, three months of clinical examination, and a course in Swedish laws and regulations. During the study period, five colleges/universities were offering the bridging program, and one of them also the proficiency test.

3.3. Sample

All IENs in Sweden who completed a bridging program ($n = 162$) or validation ($n = 103$) during the data collection period were asked to participate. In addition, regular nursing students ($n = 312$) from two higher education institutions (one college and one university) that also had the bridging program were asked to participate. Inclusion criteria for IENs were: a) IENs from non-EU countries, b) from bridging programs or validation, c) about to enter working life as RNs, and for regular nursing students: being at the point of graduation.

3.4. Data collection

Data were collected between January 2019 and June 2021 (Fig. 2). The coded questionnaire was in Swedish, available both in paper format and online. Participants answered the questionnaire when they were at the end of the process, i.e., last weeks of the programs or validation process. For IENs from bridging programs and regular nursing students, the researchers or teachers mostly handed out the questionnaires on campus, but for some (due to, e.g., Covid-19) it was mailed or emailed depending on their choice. For the validation group, study information was first given when they visited the campus for the proficiency test. Thereafter, they were contacted by email approximately four months later (estimated time to complete the final two steps of the process; three months of clinical examination and a course in Swedish laws, see Fig. 1). If they were at the end of the process, questionnaires and written study information were mailed or emailed. If they were interested but not at the end of the process, they were contacted again later. Two reminders were sent to non-responders, about one week apart.

3.5. Outcome variables

Nursing competence was measured using the 35-item Nurse Professional Competence Scale short form (NPC-SF) (Nilsson et al., 2018). The NPC-SF covers 6 factors: 'Nursing care' (5 items, Cronbach's Alpha (α) in the present study was 0.88), 'Value-based nursing care' (5 items, α = 0.88), 'Medical and technical care' (6 items, α = 0.87), 'Care pedagogics' (5 items, α = 0.91), 'Documentation and administration of nursing care' (8 items, α = 0.90), 'Development, leadership, and organization of nursing care' (6 items, α = 0.88). For total nursing competence, the α-value was 0.97. Items are measured on a 7-point scale. Total score and factor scores are calculated by summing up items, dividing by the highest possible score in the factor, and thereafter multiplying by 100. Higher scores (maximum 100) indicate greater competence. The scale's construct validity has been reported to be acceptable and internal consistency satisfactory, with α-values >0.70 for the factors (Nilsson et al., 2018).

General self-efficacy was measured using the Swedish version (Koskinen-Hagman et al., 1999) of the 10-item Generalized Self-Efficacy Scale (Schwarzer and Jerusalem, 1995). Response alternatives are on a 4-point scale, where higher scores indicate higher general self-efficacy. Psychometric properties of the scale have been tested, showing satisfactory construct validity and internal consistency (α = 0.86) (Scholz et al., 2002); present study α = 0.91.

Thriving was measured using the thriving scale (Porath et al., 2012). The scale consists of two factors: 'Vitality' (5 items, present study α = 0.83) and 'Learning' (5 items, α = 0.92). The α-value for thriving total was 0.92. Items are measured on a 7-point scale, higher scores indicating greater levels of thriving. Tests of construct validity for the scale have shown good results for the original version (Porath et al., 2012). The Swedish version of the scale was used, and internal consistency has been α > 0.80 for the factors and total score in earlier research in Sweden (Engström et al., 2021; Silén et al., 2019).

3.6. Data analyses

IBM SPSS Statistics version 27 was used to analyze the data. To compare the groups, nonparametric statistics – Chi-square, Mann-

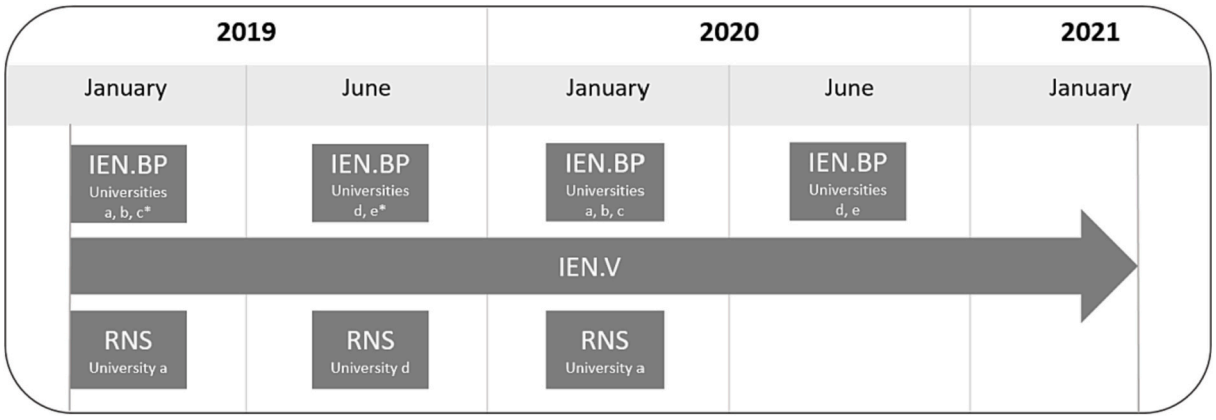

Fig. 2. Overview of data collection for the three groups.
*The colleges/universities (a–e) have different start dates for the programs, and therefore some programs end in January and some in June. For IEN.V, data were collected when participants were at the end of validation, which could be at any time during the year. IEN.BP = internationally educated nurses who had attended the bridging program; IEN.V = internationally educated nurses who had chosen validation; RNS = regular nursing students.

Whitney U, and Kruskal-Wallis tests – were used because data were non-normally distributed (tested with Shapiro-Wilk), and the groups had unequal sample sizes (Lowry, n.d.). When Kruskal-Wallis tests are statistically significant, SPSS automatically runs pairwise comparisons of the groups using Dunn post hoc tests. To reduce the risk of type-I errors, we also used Bonferroni correction for multiple tests. Effect size, *r*, was calculated using standardized *Z*-scores from Mann-Whitney *U* tests (Fritz et al., 2012). Friedman test was used to compare the six NPC factors' scores within each group, and to report effect size, Kendall's *W* (Coefficient of concordance) was used. Cohen's criteria (1992) were used to determine effect size: 0.1 = small effect, 0.3 = medium effect, 0.5 = large effect. Participants with >50 % missing values in one instrument or factor were excluded from that variable. The statistical significance level was set to $p < 0.05$. For NPC-SF, limit values for 'quite high,' 'high,' and 'very high' competence were set based on the sum if participants had filled in the same value for all items of each factor; only fives 'quite high' = 71.4, only sixes 'high' = 85.7, and only sevens 'very high' = 100.

3.7. Ethics

The study was approved by the Regional Ethical Review Board in Uppsala (reg. no. 2018/470 [2019-02420]). All researchers worked at a college/university providing the bridging and nursing programs and one also at the university providing the proficiency test. All participants received written study information, including that their participation was strictly voluntary and that participation or not would not affect their education and licensure process.

4. Results

4.1. Participant characteristics

Participants were 128 IENs from bridging programs, 61 IENs from validation, and 213 regular nursing students (response rate 79.0 %, 59.2 % and 68.3 %, respectively). The majority were females (83.3 % *n* = 335, 101 from bridging programs, 53 validation, and 181 regular nursing students). Mean age for IENs from bridging programs was 37.5 years (SD 7.0), validation 32.5 (SD 5.2), and for regular nursing students 29.6 (SD 7.1) ($p < 0.001$). Table 1 shows participants' characteristics for the two IEN groups and comparison of the groups.

Table 1
Characteristics of the two IEN groups, *n* = 189 (100 %).

	IENs from bridging programs, *n* = 128		IENs from validation, *n* = 61		*p* value
	Median (Q1, Q3) [Min–Max]	Mean (SD)	Median (Q1, Q3) [Min–Max]	Mean (SD)	
Years since nurse education *n* = 102/52	13.0 (8.0;17.2) [3.0–31.0]	13.8 (6.4)	11.0 (9.0;12.0) [3.0–35.0]	11.2 (4.8)	**0.014**[c]
Working experience as an RN (years) *n* = 123/61	4.5 (2.0;9.0) [0.0–22.0]	6.1 (5.3)	4.5 (2.0;6.0) [0.0–14.00]	4.5 (3.1)	0.180[c]
Difficulties with communication within healthcare[a] (higher scores = less frequently) *n* = 124/61	4.0 (3.2; 4.6) [1.0–5.0]	3.9 (0.8)	3.6 (3.0;4.0) [2.0–5.0]	3.5 (0.7)	**0.004**[c]

	n (%)	n (%)	
Type of degree			**<0.001**[d]
Diploma	49 (38.3)	9 (14.8)	
Bachelor/master	72 (56.3)	51 (83.6)	
Missing	7 (5.5)	1 (1.6)	
Nurse education length (years)			**0.004**[d]
≤3	51 (39.8)	11 (18.0)	
≥4	76 (59.4)	50 (82.0)	
Missing	1 (0.8)		
Working experience as RNs (number of countries)			**0.004**[d]
0	4 (3.1)	2 (3.3)	
1	103 (80.5)	37 (60.7)	
2	12 (9.4)	18 (29.5)	
≥3	2 (1.6)	2 (3.3)	
Missing	7 (5.5)	2 (3.3)	
Working experience in Swedish healthcare[b]			0.488[d]
Yes	114 (89.1)	57 (93.4)	
No	14 (10.9)	4 (6.6)	
Missing			
Relatives who spoke Swedish before learning			**0.002**[d]
Yes	55 (43.0)	12 (19.7)	
No	69 (53.9)	49 (80.3)	
Missing	4 (3.1)		
Reasons for migrating (several reasons could be reported)			
Family	64 (50.0)	16 (26.2)	
Work/studies	10 (7.8)	37 (60.6)	
Refugee/unstable situation	28 (21.9)	2 (3.3)	
Others	4 (3.1)	1 (1.6)	
Missing	24 (18.8)	6 (9.8)	

Values in boldface type indicate statistically significant values. SD = Standard deviation; Q = Quartiles; Min = Minimum; Max = Maximum.
[a] Measured on a 5-point scale, with lower scores indicating more frequent communication difficulties within healthcare (with patients, colleagues, other healthcare professionals, physicians, and managers).
[b] Jobs in healthcare that do not require nursing license, for example, nurse assistant or care assistant.
[c] Mann-Whitney U Test for comparison between the IENs groups.
[d] Chi-Square Test for comparison between the IENs groups.

4.2. Comparison of nursing competence, general self-efficacy, and thriving

For nursing competence, there were differences between the three groups in total nursing competence ($p < 0.001$) and for all factors (*p*-values < 0.001–0.002). Pairwise comparisons showed that IENs from bridging programs rated total nursing competence and all factors higher than regular nursing students did (*p*-values < 0.001–0.002, effect size small-medium [$r = 0.19$–0.45]), supporting H1. IENs who had chosen validation gave higher ratings than regular nursing students did for total nursing competence and all factors (*p*-values < 0.001–0.027, effect size small-medium [$r = 0.16$–0.35]), except factor 'Value-based nursing care,' which on the whole supports H1. Between the two IEN groups, the results were non-significant; thus, H2 was not supported. Results from a Friedman test showed differences between the six nursing competence factors scores within each group ($p < 0.001$ for all three groups) (Fig. 3). Effect size was small ($W = 0.24$) for IENs from bridging programs, and medium for IENs who had undergone validation ($W = 0.31$) and regular nursing students ($W = 0.39$).

For general self-efficacy, there was a difference between the three groups ($p < 0.001$), and pairwise comparison showed that both IEN groups rated higher general self-efficacy than regular nursing students did (IENs from bridging programs $p < 0.001$, effect size medium [$r = 0.35$]; IENs from validation $p = 0.020$, effect size small [$r = 0.17$]).

For thriving, there were differences between the three groups in total thriving ($p < 0.001$) and for factors 'Vitality' ($p < 0.001$) and 'Learning' ($p = 0.008$). Pairwise comparisons showed that both IEN groups rated higher total thriving than regular nursing students did (bridging programs $p < 0.001$, effect size small [$r = 0.22$]; validation $p = 0.012$, effect size small [$r = 0.19$]). For the factor 'Vitality,' both IEN groups rated higher values than regular nursing students did (bridging programs $p < 0.001$, effect size small [$r = 0.22$], validation $p = 0.019$, effect size small [$r = 0.18$]). For the factor 'Learning,' IENs from bridging programs gave higher ratings than regular nursing students did ($p < 0.014$; effect size small [$r = 0.15$]) (Table 2).

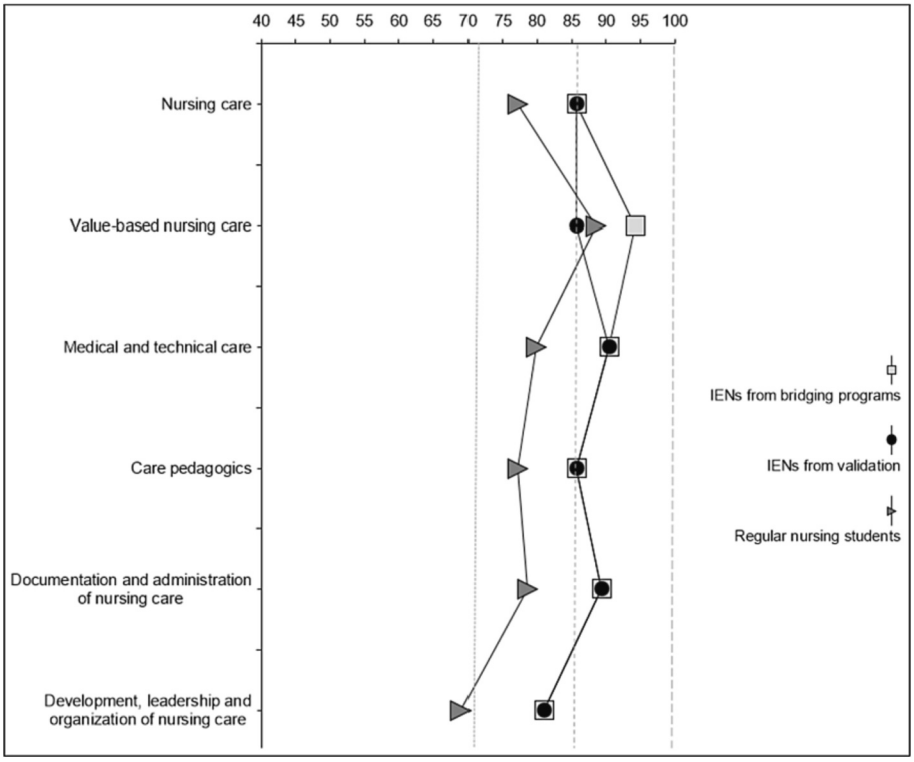

Fig. 3. Group median values for factors of Nurse professional competence scale.
The gray dotted lines indicate the limits for 'quite high' (left line), 'high' (middle line), and 'very high' (right line) self-rated competence. Calculated as if participants had filled in the same response alternative for all items of each factor; only fives (quite high), only sixes (high), or only sevens (very high), the sums would be 71.4, 85.7, 100, respectively. Possible scale range for factors: 14.3–100.0.

5. Discussion

This comparative study of two IEN groups and one group of regular nursing students is the first to generate knowledge about differences in self-rated professional competence, general self-efficacy, and thriving at the point when they are about to enter working life as RNs. Both IEN groups rated their competence overall as high and significantly higher than regular nursing students for all three outcome variables. The results showed no statistically significant differences between the IENs groups.

Regarding the factors in nurse professional competence scale, both groups of IENs rated their competence in all factors as higher than regular nursing students did (supporting H1) except for the validation group in the factor 'Value-based nursing care' (containing questions about, e.g., integrity, person-centered care, and teamwork). Person-centered care and teamwork have been mentioned in recent interview studies as something that some IENs have had to learn and adapt to in the new country (Hadziabdic et al., 2021; Högstedt et al., 2021a; Högstedt et al., 2021b). For IENs from the bridging program, we found a significant difference and according to interview studies (Hadziabdic et al., 2021; Högstedt et al., 2021a), IENs describes learning and support in the development of this competence area during the program.

According to the literature, competence is related to and might be weakened by a new context (Benner, 1993; Viken et al., 2018), whereas the IENs in our study overall rated high competence. Although the IENs had not worked as RNs in Sweden, most had working experience from Swedish healthcare (e.g., nurse assistant) and were thereby familiar with the new context. Also, during the validation and bridging program, they get the opportunity to become familiar with the Swedish healthcare system and the nurse's role (Hadziabdic et al., 2021; Högstedt et al., 2021a; Högstedt et al., 2021b). Another aspect is that almost all IENs in our study had previous experience working as RNs in other countries, some from several countries, and we believe that experiences from different countries and cultures are an important asset in today's multicultural society.

H2, stating that IENs from bridging programs would rate their competence higher than IENs who chose validation, was not supported. However, in three competence areas ('Nursing care,' 'Value-based nursing care' and 'Care pedagogics'), small effect sizes were found, thus indicating that the sample sizes might have been too small to achieve statistically significant differences (p-values: 0.299, 0.093, and 0.089 respectively). In factor 'Value-based nursing care' – IENs from bridging programs had a median score of 94.3, while IENs from the validation group had 85.7 ($p = 0.093$; effect size small). IENs from bridging programs thus on average rated themselves close to 'very high competence,' while those who had chosen validation rated themselves right on the boundary between 'quite high' and 'high.' As mentioned earlier, content in this factor has been expressed as something that IENs get an opportunity to learn and develop during the bridging program (Hadziabdic et al., 2021).

Another finding was that there were significant differences between the competence factors within each group. The small effect sizes within the group of IENs from bridging programs might indicate that they receive instruction in new competence areas during the program and thus achieve a more even level of self-assessed competence. Whereas, for the validation group and regular nursing students, effect sizes for the within-group differences were medium, which might indicate a need for more learning in some competence areas. All three groups rated themselves lowest in factor 'Development, leadership, and organization of nursing care.' For regular nursing students, this is not surprising given that working experience is needed to develop these types of skills (Benner, 1993). The results are similar to other findings on nursing students in Sweden (Lachmann and Nilsson, 2021) and Australia (van de Mortel et al., 2021), but not in China (Xu et al., 2021), and similar to RNs working in Saudi Arabia, many of whom are IENs (Halabi et al., 2021). For IENs, even though they have working experience, this area of competence may be something they have not encountered previously (Eriksson et al., 2018; Högstedt et al., 2021a; Viken et al., 2018; WHO, 2020). Moreover, this was the only area in which the IENs, on average, gave ratings between 'quite high' and 'high' (other areas, on average, ratings between 'high' and 'very high'). This could be clinically important and something that may need to be discussed and further developed in both licensure paths for IENs, and something that, for both IENs and

Table 2
Comparison of self-rated nursing competence, general self-efficacy, and thriving between groups.

Variable	IENs from bridging programs $n = 128$		IENs from validation $n = 61$		Regular nursing students $n = 213$		p value[d]	p-value pairwise[d]	Effect size[e]
Total scale and factors	Median (Q1, Q3) [Min–Max]	Mean (SD)	Median (Q1, Q3) [Min–Max]	Mean (SD)	Median (Q1, Q3) [Min–Max]	Mean (SD)			
Nursing competence[a] – total $n = 120/60/199$, $\alpha = 0.97$	88.4 (81.2;94.7) [51.4–100.0]	86.3 (10.4)	87.1 (76.3;93.5) [57.1–98.8]	84.6 (10.0)	77.6 (72.2;84.5) [42.4–99.2]	77.7 (9.4)	**<0.001**	IEN.BP - IEN·V 0.706 IEN.BP > RNS < **0.001** IEN.V > RNS < **0.001**	0.10 0.42 0.29
- Nursing care $n = 123/61/204$, $\alpha = 0.88$	85.7 (80.0;94.3) [40.0–100.0]	85.3 (11.3)	85.7 (72.8;91.4) [54.3–100.0]	82.1 (12.1)	77.1 (71.4;85.7) [40.0–100.0]	78.3 (11.0)	**<0.001**	IEN.BP- IEN·V 0.299 IEN.BP > RNS < **0.001** IEN.V > RNS **0.027**	0.12 0.31 0.16
- Value-based nursing care n = 123/61/204, $\alpha = 0.88$	94.3 (85.7;100.0) [60.0–100.0]	90.0 (10.6)	85.7 (82.8;97.1) [57.1–100.0]	87.1 (10.8)	88.6 (80.0;94.3) [40.0–100.0]	86.8 (10.2)	**0.002**	IEN.BP - IEN.V 0.093 IEN.BP > RNS **0.002** IEN.V - RNS 1.000	0.15 0.19 0.02
- Medical and technical care n = 128/61/212, $\alpha = 0.87$	90.5 (83.3;97.6) [54.8–100.0]	88.9 (9.8)	90.5 (81.0;97.6) [57.1–100.0]	88.3 (10.7)	79.8 (71.4;85.7) [45.2–100.0]	79.1 (10.5)	**<0.001**	IEN.BP - IEN.V 1.000 IEN.BP > RNS < **0.001** IEN.V > RNS < **0.001**	0.01 0.45 0.34
- Care pedagogics $n = 128/61/212$, $\alpha = 0.91$	85.7 (80.0;97.1) [45.7–100.0]	85.9 (12.2)	85.7 (71.4;91.4) [54.3–100.0]	82.0 (11.9)	77.1 (68.6;85.7) [40.0–100.0]	76.6 (11.7)	**<0.001**	IEN.BP - IEN.V 0.089 IEN.BP > RNS < **0.001** IEN.V > RNS **0.007**	0.17 0.37 0.19
- Documentation and administration of nursing care n = 121/61/205, $\alpha = 0.90$	89.3 (80.4;97.3) [51.8–100.0]	87.6 (11.2)	89.3 (77.7;96.4) [57.1–100.0]	86.4 (11.5)	78.6 (73.2;85.7) [51.8–100.0]	78.6 (10.4)	**<0.001**	IEN.BP - IEN.V 1.000 IEN.BP > RNS < **0.001** IEN.V > RNS < **0.001**	0.06 0.40 0.29
- Development, leadership, and organization of nursing care n = 128/60/211, $\alpha = 0.88$	81.0 (69.0;90.5) [35.7–100.0]	79.4 (14.8)	81.0 (71.4;88.1) [47.6–100.0]	79.5 (11.8)	69.0 (61.9;76.2) [28.6–100.0]	68.2 (13.4)	**<0.001**	IEN.BP - IEN.V 1.000 IEN.BP > RNS < **0.001** IEN.V > RNS < **0.001**	0.02 0.36 0.35
General self-efficacy[b] $n = 114/61/203$, $\alpha = 0.91$	3.4 (3.0;3.7) [1.0–4.0]	3.2 (0.6)	3.1 (2.8;3.5) [1.2–3.9]	3.1 (0.6)	3.0 (2.6;3.2) [1.5–4.0]	2.9 (0.5)	**<0.001**	IEN.BP - IEN.V 0.083 IEN.BP > RNS < **0.001** IEN.V > RNS **0.020**	0.18 0.35 0.17
Thriving – total[c] $n = 121/60/196$, $\alpha = 0.92$	6.2 (5.5;6.8) [1.4–7.0]	5.7 (1.6)	6.2 (5.6;6.5) [1.0–7.0]	5.8 (1.2)	5.6 (5.2;6.2) [1.9–7.0]	5.6 (0.8)	**<0.001**	IEN.BP - IEN.V 1.000 IEN.BP > RNS < **0.001** IEN.V > RNS **0.012**	0.05 0.22 0.19
- Vitality $n = 122/60/196$, $\alpha = 0.83$	5.8 (5.0;6.8) [1.0–7.0]	5.5 (1.5)	5.8 (5.0;6.2) [1.0–7.0]	5.5 (1.2)	5.2 (4.6;6.0) [1.4–7.0]	5.2 (1.0)	**<0.001**	IEN.BP - IEN.V 1.000 IEN.BP > RNS < **0.001** IEN.V > RNS **0.019**	0.04 0.22 0.18
- Learning n = 121/60/196, $\alpha = 0.92$	6.6 (5.8;7.0) [1.0–7.0]	5.8 (1.8)	6.5 (6.0;7.0) [1.0–7.0]	6.1 (1.3)	6.2 (5.8;6.8) [2.4–7.0]	6.1 (0.8)	**0.008**	IEN.BP - IEN.V 1.000 IEN.BP > RNS **0.014** IEN.V - RNS 0.112	0.02 0.15 0.14

Values in boldface type indicate statistically significant values. α = Cronbach's Alpha; SD = Standard deviation; Q = Quartiles; Min = Minimum; Max = Maximum; IEN. BP = internationally educated nurses who had attended the bridging program; IEN·V = internationally educated nurses who had chosen validation; RNS = regular nursing students; In column '*p*-value pairwise[d],' we have used > and < when pairwise comparison showed statistically significance to illustrate which group had the highest median and hyphens to indicate non-significant values.

[a] Items were measured on a 7-point scale. Scores were calculated by summing up items in each factor, divided by the highest possible score in the factor, and multiplied by 100. Higher scores indicate greater self-rated professional competence.

[b] Items were measured on a 4-point scale, with higher scores indicating higher self-rated general self-efficacy.

[c] Items were measured on a 7-point scale, with higher scores indicating greater levels of self-rated thriving.

[d] Kruskal-Wallis Test and pairwise comparison for comparison between the three groups.

[e] Effect size calculated using standardized *Z*-scores from Mann-Whitney *U* tests (Fritz et al., 2012), 0.1 = small effect, 0.3 = medium effect, 0.5 = large effect (Cohen, 1992).

new graduates, might need extra attention and support from first-line managers.

Our results also showed that both IEN groups rated higher general self-efficacy and thriving (total score) than regular nursing students did. All IENs in the study had managed to complete a process to obtain a Swedish nursing license. It may be that the IENs were helped by their self-efficacy to cope with and succeed in the transition process (cf. Ghazal et al., 2020). Their self-efficacy may also have been strengthened by having coped with all the challenges, and their sense of thriving may have been strengthened by the development and learning that comes from undergoing the process (Aggar et al., 2020; Hadziabdic et al., 2021; Högstedt et al., 2021a; Högstedt et al., 2021b). Looking at the IENs' characteristics, those who chose validation had more recently graduated from their nursing education, and a larger proportion had a longer education and higher degrees. There are also differences regarding completion, with higher rates among IENs from bridging programs compared to those from validation. These factors may have influenced our results and may also be important for succeeding in the validation process. IENs are a heterogeneous group, and they may have different training and preparation needs before receiving a nursing license in a new country.

5.1. Methodological considerations

Study weaknesses are the non-randomized design and few participants in one of the IEN groups. Because the data were non-normally distributed, non-parametric statistics were used and it was not possible to control for between-group differences in participant characteristics. The three groups had unequal sample sizes, for two reasons: during the data collection period, fewer received a license through validation than through bridging programs (93 vs 168), and more regular nursing students were asked to participate, as we suspected a larger proportion would decline because the research aim mainly concerned IENs. However, according to Polit and Beck (2017), with a power of 0.80, medium effect size, and α = 0.05, there should be a minimum of 64 participants in each group, which we almost achieved. Reporting both *p*-values and effect sizes is considered a strength and helps the reader draw conclusions about the importance of findings (Polit and Beck, 2017). Generalizability is strengthened because all IENs who completed a bridging program and validation in Sweden during the data collection period were invited.

5.2. Conclusion

The IENs rated their professional competence, general self-efficacy, and thriving higher than regular nursing students did. Both groups of IENs rated their competence high overall, and there were no statistically significant differences in their estimations even though they had taken different paths. Differences were found, however, between the different competence areas within the groups, which could be useful results for those who develop bridging programs and validation processes, as well as for healthcare managers in their support of IENs working as RNs in a new country. To investigate whether the path to obtaining a nursing license in a new country is of importance later when working as an RN, further research is needed.

CRediT authorship contribution statement

Denice Högstedt: Conceptualization, Methodology, Formal analysis, Investigation, Writing - Original draft preparation, Writing – Review & Editing. Inger Jansson: Conceptualization, Methodology, Writing – Review & Editing. Elisabet Eriksson: Conceptualization, Methodology, Writing – Review & Editing. Maria Engström: Conceptualization, Methodology, Writing – Review & Editing, Supervision. All authors approved the final manuscript.

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Ethical approval

The Regional Ethical Review Board in Uppsala (reg. no. 2018/470 [2019-02420]) approved the study.

Conflict of interest

The authors are employed at universities that have the bridging program, and one of the authors is employed at the university that provides the proficiency test. The authors have no commercial associations or conflicts of interest.

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