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ORIGINAL ARTICLE

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Initial testing of the use of the Safer Nursing Care Tool in a Canadian acute care context

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Abstract

Aim: Initial testing of England's Safer Nursing Care Tool for adult in-patient acute care wards in a university-affiliated Canadian hospital.

Background: Safe-nursing staffing decisions have significant impacts on patients' safety and quality of care. The Safer Nursing Care Tool was developed in England to provide managers with a validated formula for making appropriate nursing staffing decisions. The tool has been widely used and studied in the UK but has yet to be tested in a Canadian context.

Method: Ten high service quality acute care wards from a university-affiliated Canadian hospital tested the use of the Safer Nursing Care Tool. Service quality, patients' dependency/acuity and staff activity data were benchmarked against information collected in 726 comparable UK wards.

Results: Higher bed occupancy and patient dependency/acuity mix were found in the 10 Canadian wards compared to their UK counterparts. Overall staff activity was comparable between UK and Canadian wards.

Conclusion: The Safer Nursing Care Tool can be applied in this Canadian hospital, and further testing in other hospitals and specialties is required.

Implication for Nursing Management: The Safer Nursing Care Tool is a valid staffing tool to use that, when combined with professional judgement, can help managers to properly establish nursing staff in acute care wards.

KEYWORDS

patient dependency/acuity, safe-nursing staffing, Safer Nursing Care Tool

1 | BACKGROUND

Having the appropriate number of nursing staff in each acute care ward is essential for quality of care and patient safety (Aiken et al., 2014; Griffiths et al., 2016; Griffiths et al., 2018; Hurst, 2005; Kane et al., 2007). However, making a nursing staffing decision is influenced by efficiency and quality of care but also by costs. Indeed, nurses represent the largest group of health care providers, thus a

significant part of a hospital's budget (Kavanagh et al., 2012). Minimum patient-to-nurse ratios have been found to improve the quality of care in Australia and in the United States of America (e.g., Osborne, 2014; Unison, 2015). Individual patient needs play a major role in making appropriate decisions about safe-nursing care and staffing requirements. The National Institute for Health and Care Excellence (NICE, 2014a) highlighted that staffing decisions should be made at a ward level as no staff-to-patient ratio can be applied to all wards equally. Thus, recommended or legislated patient-to-nurse ratios should be used as a general guideline and other workforce planning tools and strategies should be employed (NHS, 2013a). Many tools have been developed to aid the safe-nursing staffing decision-making process, but most tools have not yet been supported by robust evidence-based research (Griffiths et al., 2020). However, the Safer Nursing Care Tool (SNCT) is widely used in England and has been tested in validation studies in United Kingdom (UK) countries (Shelford Group, 2014).

2 | SAFER NURSING CARE TOOL (SNCT)

The SNCT has been developed in England to help the National Health Service (NHS) hospital managers make evidence-based staffing decisions by assessing patient dependency and/or acuity and staff activity (Shelford Group, 2014). The tool was first published in 2006 in conjunction with the Association of United Kingdom University Hospitals. The original SNCT development included over 1,000 acute and rehabilitation wards. The most recent nursing database, which is continuously updated, and from which the SCNT staffing multipliers were developed, includes 1,928 high-quality acute care wards spanning up to 34 clinical specialities. The database stores 2,274,990 timed nursing interventions delivered to 1,255,041 patients allocated to distinct dependency/acuity categories (Hurst, 2020). The SNCT is currently used in about 80% of English NHS' acute care hospitals (Ball et al., 2019) and is the only safe-nursing staffing tool endorsed by the NICE (2014a).

The SNCT is a patient classification system; five levels of care with each level representing patients incrementally reliant on nurses for care and daily activities. According to the Shelford Group (2014), SNCT levels of care are described as follows:

- Level 0: patients with low dependency/acuity who require hospitalization but whose needs are met by normal ward care.
- Level 1a: patients who are acutely ill and who require interventions or who are at a greater risk of deterioration.
- Level 1b: patients who are dependent on nurses for most, if not all, of their daily living activities but whose condition is stable.
- Level 2: deteriorating/single organ compromised patients requiring specialist experienced nursing staff to manage their care within clearly identified, designated beds OR may require transfer to a dedicated Level 2 facility/unit.
- Level 3: patients with complete reliance on nursing care and needing advanced respiratory support or therapeutic support of multiple organs.

Each level of care (0, 1a, 1b, 2, 3) is characterized by clinical descriptors such as the level of dependence of a patient (i.e., required assistance for activity of daily living) and the intensity of the care and clinical surveillance required for the level of acuity of a patient (e.g., frequency of vital sign monitoring post procedure, early warning sign, oxygen requirement). Some other elements are present in the descriptors as well, such as the required supervision for patients presenting a risk of elopement, falls, self-injury and the required time for discharge planning and to support a family. Each time that one of the several elements of the clinical descriptor is found the patient falls into that specific level of dependency and acuity. When elements are found in more than one dependency and acuity level, the highest level is always selected.

Therefore, the SNCT can estimate how many nursing staff are required to provide safe and quality nursing care. The nursing staff include nurses and support workers such as health care assistants. Each dependency/acuity level has a workload multiplier, which represents the nursing staff (expressed in whole time equivalent) required per category. The workload multipliers and the number of patients in each level are used to estimate the total number of whole time equivalent required on a given unit or service. The multipliers have been validated on over 40,000 observations of patient care episodes (NICE, 2014b). Multipliers account for annual or study leave as well as sickness and compassionate leave with at least a 22% uplift (Shelford Group, 2014). The five multipliers have the advantage of providing nursing decision-makers with software supported, simple evidence-based staffing formula derived from data drawn from several hundred high-quality best practice wards.

A recent study by Fanneran et al. (2015) suggested that nursing decision-makers found the SNCT is simple to use and less time-consuming than other workload measures. This study further found that the SNCT is perceived as a valuable resource for making nursing staffing decisions when used in combination with one's professional judgement. However, the same study suggested that the SNCT fails to capture all nursing activities despite non-participant observations including 15 direct care activities; five indirect care; eight associated work (i.e., administrative and clerical work); and four non-productive activities (e.g., coffee breaks). Efforts have been deployed to use and adapt the SNCT to different nursing specialities such as palliative care, hospice wards (Roberts & Hurst, 2013) and community nursing (Kirby & Hurst, 2014). Using the SNCT in different nursing specialities and environment will lead to additional specialty-specific multipliers aligned to care level descriptors and to a better understanding of each speciality/environment workload realities and staffing needs.

3 | THE PRESENT PROJECT

The SNCT has been widely adopted in England, but little is known about the tool's usability in other countries. Thus, we aimed to perform an initial testing of England's SNCT care level descriptors and staffing multipliers in a large university-affiliated Canadian hospital as part of a quality improvement (QI) project. We selected the SNCT because it is currently the only evidence-based staffing evaluation tool

that is based on quality and safety standards. Furthermore, the SNCT has a database from almost two thousand (and growing) best practice wards throughout the UK's NHS health network. Finally and following appropriate training, the SNCT was also selected for this project as it is simple to use, taking about 30 min for a 32-bed unit and requiring only simple daily assessments (i.e., patient dependency/acuity).

4 | METHOD

4.1 | Design

A prospective descriptive design was used for this QI project.

4.2 | Setting and sample

The acute care clinical specialities from both the Canadian and the UK hospitals as well as the patient populations and data collection methods were matched to ensure comparability.

4.2.1 | Canadian hospital

This QI project was conducted in a large university-affiliated Canadian hospital from a major metropolitan city between January 2016 and September 2016. Originally, 12 acute care wards were selected to participate in the QI project but two failed to reach the 70% service quality watermark (Hurst, 2020) and were then excluded. The clinical specialities of the 10 included wards were general and internal medicine, neurology, oncology and the surgical specialities included orthopaedic, colorectal, gynaecology, ENT (ear, nose, throat) and general surgery.

4.2.2 | United Kingdom hospitals

UK acute care wards were matched to Canadian wards according to clinical specialties. A total of 726 UK speciality wards from the acute nursing database similar to the 10 acute care ward's clinical specialities from the Canadian hospital were selected and comprised the UK sample. UK data were collected by independent observers from participating hospitals who undergo standardized training. The same procedure (described below) was used in the Canadian hospital.

4.3 | Procedure

Service quality, patient dependency/acuity and staff activity data from the target Canadian hospital were benchmarked against information collected in the same way in 726 UK wards drawn from the same clinical specialities using identical procedures to ensure that the UK and Canadian patient samples and data collection methods were similar.

4.4 | Measures

4.4.1 | Service quality

To ensure that the data gathered are only from best practice wards, service quality was first assessed. Only wards with acceptable service quality scores were retained (as in the UK database) to generate optimum SNCT staffing multipliers. Five service quality categories (157 items) were assessed both in the UK and in the Canadian hospitals:

- **Category 1:** Patient assessment: its timing and completion (14 items);
- **Category 2:** Care planning: its nature and value (12 items);
- **Category 3:** Nature, timing and implementing interventions suggested in the care plan (80 items);
- **Category 4:** Evaluation of nursing care (11 items); and
- **Category 5:** Ward and management-oriented questions (40 items).

Categories 1–4 applied to each patient, while Category 5 applied to the ward (i.e., not patient related).

The 157 items were developed in the UK context and were reviewed for clarity and relevance to the Canadian context. Clarity (yes/no) and relevance (4-level descriptive scale, i.e., very irrelevant, irrelevant, relevant, very relevant) of items were evaluated by 24 advanced practice nurses (i.e., CNS and nurse educators) and nurse managers. Out of the 157 items, 123 items were evaluated as clear by 80% of the nurses. From the 34 items considered unclear by at least 20% of the nurses, six were in the patient assessment category, four in the care planning category, 13 in the implementation category, one in the evaluation category, and 10 in the ward management category. Most aspects were fixed by adapting terms (e.g., type of assessment, catheter, facilities) to align with the Canadian culture and the Canadian English language (e.g., bed side rail instead of cotsides). Only 12 items were rated as either very irrelevant or irrelevant by at least 20% the nurses. Six of these items were in the implementation category, and six other items were in the ward management category. Overall, 20 items were modified to adapt the language and three were removed according to Canadian standards. For instance, in the implementation category, the patient's name is not displayed on bed in Canada and was removed, and the male patient is not shaved every day but rather done based on patient's preference and was modified accordingly. Also, in the ward management category, electrical equipment is not unplugged when not in use because it has to be plugged in to be charged; therefore, this item was modified. Modifications and adaptation of items were discussed with the UK team to ensure that the meaning of items was preserved.

Service quality categories 1–4 were applied to one third of the patients in each dependency/acuity group (i.e., questions were answered up to 10 times in one ward) for data to reflect ward patient dependency and acuity. Category 5 questions were submitted once in each ward. Consequently, each ward's full audit represents a sizable sample.

4.5 | Safer Nursing Care Tool

Data from the present study were collected by 21 independent observers. Observers did not collect data in their own wards. All were advanced practice nurses, either clinical nurse specialists (CNS) or nurse educators. The qualified independent observers were trained by the research team and the English SNCT academic and clinical leaders. All 21 observers were paired for inter-rater reliability checks of all items of the service quality audits and of the staff activity scoring over three afternoon shifts. Percentages of agreement had to range from 95%–100% between two raters for the results to be considered reliable. For the staff scoring activity, a minimum of two assessments with rater pairs achieving perfect agreement had to be reached before each rater could pursue assessments individually. This ensured reliable data in this QI project.

The original English version of SNCT tool was translated into French Canadian inspired by Sousa and Rojjanasrirat's (2011) four-step back-translation procedure. First, two French-speaking health care professionals independently translated the tool from English to French Canadian. Second, a committee comprising three persons including the two health care professionals who translated the tool and the academic researcher with expertise in health measurement development, adaptation and validation compared the French Canadian versions to the original English version. Disagreements between the two French Canadian versions were resolved until a preliminary French Canadian version was unanimously accepted by the committee. The third step was independently translating the preliminary French Canadian version back into English by two English-speaking individuals who had no prior knowledge of the tool. One was an experienced nurse familiar with health care terminology, and the other was not a health care professional and was familiar with colloquial phrases and idiomatic expressions in English. Finally, the two English versions obtained at step 3 were compared to the original English version by a six-person committee including the two persons who translated the tool into English, one of the two persons who first translated the tool into French Canadian, two health care professionals not yet involved in the tool's translation and the academic researcher. Again, disagreements were discussed and resolved through discussions which resulted in a final French Canadian version. The original English SNCT tool authors were also consulted in order to ensure proper translation.

4.5.1 | Patient dependency/acuity

Patients were assessed over six shifts from the Thursday night shift to the Saturday afternoon shift, thus covering two day shifts, two evening shifts and two night shifts. Weekday and weekend were included to ensure representativeness. Each unit was assessed on a different week by up to four observers. The dependency-rating scale used by the qualified independent observers is available upon request to the author (Hurst, 2020). As a result, patients were placed into four categories ranging from low (Dep. 1) to high (Dep. 4) dependency/acuity. The four categories represent patients of increasing reliance on nurses for daily needs.

4.5.2 | Staff activity

Hurst's (2008) data collection procedure for recording staff activity was followed. Nurses in selected wards were observed over six shifts (covering 24 hr, Monday to Sunday). Staff activity data were collected alongside patient dependency information by hand using hard copies of the tool. Qualified independent observers located all ward staff every 10 min and recorded their primary activity as:

- Direct or face-to-face care;
- Indirect care (activities not at the bedside such as a writing a report);
- Non-nursing/associated work (e.g., non-patient paperwork, routine cleaning); and
- Personal time (unproductive periods such as meal breaks).

4.6 | Analyses

Service quality, bed occupancy, patients' dependency/acuity and staff activity are summarized using descriptive statistics for UK and Canadian acute care wards, and 95% confidence intervals for UK wards. Percentages were obtained for service quality data including the five quality categories. Averages were calculated for number of occupied beds (bed occupancy), number of patients in each dependency/acuity category, staff activity counts and related time (i.e., care hours per activity and care hours per dependency/acuity category). A workload index was also calculated using bed occupancy, patient dependency/acuity mix and staff activity data.

4.6.1 | Data accuracy

The main threat to the SNCT system as a workload-based staffing method is inaccurate patient assessment by ward nurses or staff activity recording inconsistencies by independent (non-participant) observers. The workload-quality method's strength, however, is an implicit data collection accuracy and consistency check, which are difficult to falsify. Direct care ratios are the average time (in hours) of face-to-face care per patient per day in each dependency/acuity category, which were calculated for UK and Canadian wards. We argue that if ward nurses failed to assess patient dependency/acuity accurately, or if non-participant observers wrongly assigned nursing interventions using ward nurse patient classification, then the observed incrementally rising care times from least to most dependent patients would falter.

4.6.2 | SNCT multiplier creation process

Best practice wards in the master database (n = 1,927) are used for several purposes other than SNCT multiplier creation (such as national benchmarking). Consequently, patient and staff activity data are recorded and stored in the main databases using a universal patient classification system (Dep. 1 to Dep. 4) first used for database purposes in 1985. Creating the first SNCT multipliers, in 2006, therefore, meant that dependency/acuity categories had to be recalibrated as SNCT care levels. The process was lengthy and detailed. That is, NHS patients were dual scored, that is assigned a Dep. 1 to Dep. 4 score and a SNCT care level score so that each patient had two dependency/acuity scores. The cross-tabulation in Table 1 summarizes dual scores from almost 48,000 NHS inpatients (taken from the database at the time the Canadian project was underway).

We know from staff activity analysis in best practice wards precisely how much care (as whole time equivalents per patient) Dep. 1 to Dep. 4 patients require. Total patients falling in each Dep. 1 to Dep. 4 category are multiplied by the relevant FTE (full time equivalent) to give the ward's staffing establishment. It is then a process of apportioning dependency Dep. 1 to Dep. 4 FTEs to SNCT care levels: For an illustration, check Table 2.

5 | RESULTS

5.1 | Section 1: Service quality

Service quality scores for all UK wards as well as the 12 wards from the Canadian hospital are described in Table 3. Two Canadian wards had service quality below 70% and were then excluded to avoid extrapolating from suboptimal wards. Results suggested that the overall service quality at the Canadian wards was lower than what was found in the UK wards for three service quality categories: assessment, planning and implementation.

5.2 | Section 2: Data accuracy

Direct care ratios for all 726 UK wards and the 10 wards from the Canadian hospital per patient's dependency/acuity category are presented in Table 4. In the UK wards, the highest dependency/acuity patients (Dep. 4, direct care ratio = 14.9) received almost five times more hands-on care time from ward nursing staff than Dep. 1 patients (direct care ratios = 3.1). In the Canadian hospital, the highest dependency/acuity patients (Dep. 4, direct care ratio = 10.4) received two times more hands-on care time from ward nursing staff than Dep. 1 patients (direct care ratios = 4.9). Thus, findings suggested that more care hours per patient day in the lowest (Dep. 1) dependency/acuity category and less care hours per patient day in the highest dependency/acuity category (Dep. 4) were observed in the Canadian wards compared to their UK counterparts.

5.3 | Section 3: Occupancy and dependency

The average bed occupancy and the patient dependency/acuity for the 10 Canadian hospital wards and their comparable 726 UK wards are described in Table 5. The UK data include 479,160 patient dependency/acuity assessments, while the data from the Canadian hospital include 1,170 patient dependency/acuity assessments. The 10 Canadian wards had a higher bed occupancy rate (30.6) than the UK wards (22, 95% CI: 21–23). Furthermore, the Canadian wards had a patient dependency/acuity mix that generated a heavier workload than their UK counterparts. Specifically, proportionally more patients from the Canadian wards fell into the higher dependency/acuity categories, a difference that was observed for all four dependency/acuity categories. For instance, 3.3 patients per day on average were classified as highly dependent/acute (Dep. 4) in the Canadian wards, while 2.2 (95% CI: 1.2–2.3) patients per day were classified in Dep. 4 in the 726 UK wards.

5.4 | Section 4: Staff activity

In the UK, ward nursing staff activity was observed for a total of 20,772 hr in 776 wards comparable to those selected in Canada resulting in 704,950 recorded ward activities. In the Canadian hospital, ward nursing staff was observed for 480 hr in 10 wards resulting in 26,869 recorded ward activities. Total observations and percentage of time spent in each care category in the UK as well as in the Canadian hospital are described in Table 6. Findings showed that

TABLE 1 Cross-tabulation of dependency level and SCNT care level

Dep. level * SNCT cross-tabulation

	SNCT care level					
Dep. level	0	1a	1b	2	3	Total patients
1	22%	0%	0%	0%	NA	4,388
2	66%	70%	21%	21%	NA	23,888
3	12%	30%	58%	54%	NA	15,684
4	0%	0%	21%	25%	NA	3,978
Total patients	19,740	10,085	13,937	4,176	NA	47,938

TABLE 2 Dependency category, FTE per patient and proportion falling in SNCT Level 0

Dep. category	FTE per patient	Proportion falling into Level 0 (%)
1	0.72	22
2	1.01	66
3	1.56	12
4	2.39	0

Note: Example from this cross-tabulation, a SNCT Level 0 patient, therefore, requires: (a) 22% of Dep.1 FTE, (b) 66% of a Dep.2 FTE, (c) 12% of a Dep.3 FTE, (d) 0% of a Dep.4 FTE, which equates to 1.01 FTEs per patient. The process is repeated to generate SNCT Level 1a to Level 2 multipliers. The Level 3 multiplier, on the other hand, is based on one-to-one patient care and does not require the dual score calculation process. The Dep. conversion to SNCT described here is an illustration. The latest SNCT multipliers are proprietary, copyright, protected by intellectual property and only released to licensed users who sign a non-disclosure agreement. For that reason, SNCT multipliers cannot be published in this article.

TABLE 3 Service quality (%) in UK and Canadian acute care wards

	726 UK wards	95% CI	10 Canadian wards
Overall	78%	77–80	74%
Assessment	69%	68–73	59%
Planning	59%	57–62	56%
Implementation	87%	86–90	78%
Evaluation	68%	67–72	67%
Environment	83%	82–86	82%

Note: 95% CI, confidence interval.

TABLE 4 Direct care ratios in UK and Canadian acute care wards

Wards	*N*	Dep. 1	Dep. 2	Dep. 3	Dep. 4
UK	726	3.1	5.0	8.9	14.9
Canadian	10	4.9	5.8	8.8	10.4

Note: Dep. 1, independent; Dep. 2, low-medium; Dep. 3, medium-high; Dep. 4, dependent.

nearly half of all staff activity was spent in direct patient care (44.8% in UK and 42.1% in Canadian wards). The direct care percentage was higher in the UK than in the Canadian hospital, but it should be noted that the Canadian hospital direct care percentage fell outside the UK's 95% confidence interval lower bound by only 0.3% representing a difference of only three recorded direct care activities per 1,000 observations. The percentage of time spent in indirect care was higher in the Canadian than in the UK wards. Similarly, the percentage of time spent in associated care was lower in the Canadian than in the UK wards. Finally, a higher percentage of time was spent in personal time in the Canadian than in the UK wards related to nurses' contract in Québec. However, personal time should be ruled out of the SNCT comparability decision-making process because the Canadian hospital's break time allowance policy differs to the UK's.

6 | DISCUSSION

In a context of increasing nurse shortage in North America (e.g., Han et al., 2015) and in Europe (e.g., Collins, 2019; Thomas, 2020), and given the significant impact understaffing has on patients care and safety (e.g., Aiken et al., 2014; Griffiths et al., 2016; Griffiths et al., 2018; Hurst, 2005; Kane et al., 2007), it is essential for acute care hospitals to use their nursing resources appropriately. It is believed that the SNCT, a safe-nursing staffing tool, provides managers with the appropriate guidance for making sound staffing decisions. Contrary to policies where staffing decisions are based on patient-to-nurse ratios, the SNCT is more sensitive to the true dynamics of individual wards as it is based on workload and patients' dependency on nursing staff. The SNCT is now widely used in England (Ball et al., 2019), and ample data exist from the English NHS hospital network; however, it has never been trialled in a Canadian context. Thus, the goal of this QI project was to determine whether the SNCT care level descriptors and staffing multipliers established in the UK can be applied in a Canadian hospital.

Overall results supported the use of the England's SNCT multipliers for making safe-nursing staffing decision in the Canadian hospital. Specifically, findings suggested that the direct care ratios and staff activity in the Canadian wards were comparable to their UK counterparts. Some differences were nonetheless detected. The overall service quality was found to be significantly lower in the Canadian hospital even though it reached the pre-determined 70% quality watermark (overall score of 74%). The 726 UK wards' 95% confidence interval indicates that 95% of the best practice UK wards have an overall service quality score between 77% and 80%. It thus appears that the use of the SNCT tool is beneficial to the Canadian hospital because lower quality scores are related to rising workload and understaffing. Another difference was found to be related to bed occupancy and dependency/acuity mix in the 10 Canadian wards that were greater/more dependent/acute than their UK counterparts, which may explain the lower service quality score described above.

7 | IMPLICATION FOR NURSING MANAGEMENT

The implications for nursing management in Canada are extensive as the findings supported that the SNCT tool and its associated staffing multipliers, derived from very large samples of UK acute care wards, can be applied in a Canadian health care context. The SNCT is a validated, easy-to-use tool that is recommended to be administered only twice per year (Shelford Group, 2014), which makes it a safe-nursing staffing tool of no significant burden on managers.

TABLE 5 Bed occupancy and patient dependency/acuity in UK and Canadian acute care wards

	Average bed occupancy	Dep. 1	Dep. 2	Dep. 3	Dep. 4	Assessments	Workload Index
726 UK wards	22	3.3	9.7	6.8	2.2	479,160	2.24
95% CI	21–23	2.03–3.4	8.4–10	6–7	1.2–2.3		2.23–2.49
10 Canadian wards	30.6	0.8	12.3	14.2	3.3	1,170	2.54

Note: Dep. 1, independent patients; Dep. 2, low-medium; Dep. 3, medium-high; Dep. 4, dependent; 95% CI, confidence interval.

TABLE 6 Main staff activity in UK and Canadian acute care wards

	726 UK wards			10 Canadian wards	
Source	Observations	Time spent (%)	95% CI	Observations	Time spent (%)
Direct care	315,936	44.8	42.4–46.1	11,317	42.1
Indirect care	168,804	23.9	23.8–34.1	8,445	31.4
Associated work	123,823	17.6	9–13.7	2,517	9.4
Personal	96,387	13.7	6.5–8.3	4,590	17.1

Note: 95% CI, confidence interval.

Interestingly, the Shelford Group (2014) recommends assessing patients' dependency and acuity specifically in January and in June which would, over time, track seasonal trends in safe-nursing staffing requirements.

As highlighted by several authors (e.g., Griffiths et al., 2020; Mitchell et al., 2017), the SNCT as well as any safe-staffing tool must be used in combination with professional judgement of the person making the assessments and the final staffing decision. This is also ascertained by the Shelford Group who highlights the importance of combining multiple methods such as using the SNCT in combination with qualitative data and professional judgement to make the most appropriate staffing decisions (NHS, 2013b). Thus, the SNCT is a valid and valuable workforce planning tool that, when combined with professional judgement, can be of significant use to nursing management.

8 | LIMITATIONS

The major limitation of this project is that the SNCT was tested in a single Canadian hospital. Findings are appropriate for this particular urban health care organisation from a large urban area, but SNCT testing in other Canadian hospitals from different areas is necessary. Another limitation pertains to including only 10 acute care wards from the Canadian hospital. The inclusion of other speciality wards would be relevant. Comparing nursing culture in Canadian and English hospitals using other variables would strengthen the arguments that SNCT has validity in other Canadian hospitals. Furthermore, it is recommended that the SNCT patient rating system is used for a 20-day minimum to accurately estimate the total nurses that should be employed in each ward (Shelford Group, 2014) and a recent independent review suggested a minimum of 40 days sample (Griffiths et al., 2020). In this QI project, assessments were collected on only six shifts per ward. However, the goal was to determine whether the observed bed occupancy, direct care ratios, patient dependency/acuity and staff activity were comparable to the UK's where nearly 480,000 patient dependency assessments were conducted and 20,772 hr of staff activities was recorded. Finally, the SNCT tool was tested for use with registered nurses in a primary care model in this QI project. Further validation testing would be necessary in a different care model including both registered nurses and licensed practical nurses work owing to their different scope of practice.

9 | CONCLUSION

In summary, this QI project described the SNCT's first use in a Canadian hospital. Findings showed a higher bed occupancy and higher dependency/acuity mix in the Canadian wards compared to their UK counterparts. Although less time appeared to be spent in direct care in the Canadian wards, overall staff activity was similar to what was observed in the UK wards. Thus, findings suggest that the Canadian direct care ratios, the workload index and staff activity are comparable to their UK counterparts. Consequently, the SNCT care level descriptors and staffing multipliers can be applied in this Canadian hospital and potentially at a large scale in Canada.

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CONFLICT OF INTEREST

All authors have no conflict of interest to report.

ETHICAL APPROVAL

Not applicable, this was an improvement quality project part of the mandate of the Direction of Nursing.

DATA AVAILABILITY STATEMENT

Author elects to not share data.

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