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Clinical Supervision and Non-Technical Professional Development Skills in the Context of Patient Safety—The Views of Nurse Specialist Students

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Abstract

The aim of the study was to evaluate nurse specialist students' views of clinical supervision (CS) and its influence on their professional competence development. An additional aim was to interpret the results and link them to non-technical skills and Patient Safety (PS) topics. The research question was: What are the benefits of clinical supervision focusing on non-technical skills in the area of PS? A cross-sectional study of 46 nurse specialist students was conducted by means of questionnaires and exploratory factor analysis. Factors that influenced the nurse specialist students' competencies were: interpersonal, professional and communication skills in addition to awareness of ethical skills, the importance of teamwork and the benefit of involving patients and their family members in safe care. The results were linked to non-technical skills and PS competencies. Clinical supervision is crucial for the development of non-technical skills and PS competencies among nurse specialist students. However, finding time to reflect and learn from the supervision was reported to be a problem. Over half of the students stated they did not have enough time for supervision. Thus, there is a potential for quality improvement. We recommend that universities should provide formal educational programmes for supervisors focusing on the professional development of students, especially in the area of non-technical skills. In conclusion, CS should be prioritised by management and clinical leaders as it enhances PS.

Keywords

Clinical Supervision, Non-Technical Skills, Nurse Specialist Students, Patient Safety, Professional Development

1. Introduction

This study focuses on nurse specialist students (NSS) in the final phase of their postgraduate education in surgical, oncology, anaesthesia and intensive care nursing. The education comprises both a theoretical and a clinical part. Clinical supervision (CS) and systematic reflection on clinical experiences constitute an important component of the education. Supervisors are in a unique position to facilitate learning processes and promote the students' professional growth and identity building as specialist nurses [1] [2]. However, many clinical nurse supervisors in Norway have no formal qualifications or training for supervision. The supervisor's role is significant for the quality of supervision and a systematic structure enhances the students' professional development, leading to positive outcomes in terms of quality and patient safety (PS) [3]. Empirical research has focused on different models of supervision, effectiveness and quality of care as well as on ethical issues [3]. There are several definitions of CS and Lyth [4] underlined the difficulty of clarifying the concept, as nursing practice varies. An article by Proctor [5] identified three components of supervision: normative (standard setting), formative (development) and restorative (support), which have been adopted by the nursing profession as key elements in the CS literature [6]. These three components have stood the test of time, thus the purpose and content of CS encompasses one or a combination of the following: a learning, supportive and monitoring process [6]. In this paper, CS is defined as a pedagogical human development process, in which the participants raise questions, explore, explain and systematize care experiences from a perspective that is considered holistic in the professional context [7].

PS is the cornerstone of high quality healthcare [8]. Systematic development of PS is necessary as poor quality care causes human suffering [9]. Much of the work defining PS and practices that prevent harm has focused on negative care outcomes, such as mortality and morbidity [8]. Patient safety culture is a subset of the organizational culture relating specifically to the values and beliefs concerning PS [10]. Mustard [11] (p. 112) defined the patient safety culture as "a product of social learning, ways of thinking and behaving that are shared and that work to meet the primary objective of patient safety". Implementation of PS requires evidence-based knowledge, professional staff and financial resources [12]. Thus, the quality of care is dependent on nurses' professional competence and the use of the best evidence in practice [13].

Work remains to be done in evaluating how PS competencies can be learnt and how knowledge, skills and attitudes that enhance PS can be developed [14] [15]. According to Sullivan *et al.* [16], a major national initiative in the US, Quality and Safety Education for Nurses (QSEN), attempted to define competencies for nursing students. The primary goal was to address the challenge of providing future nurses with the necessary knowledge, skills and attitudes to continuously improve the quality and safety of the healthcare systems in which they work [17]. The competencies are supported by The WHO [18] safety curriculum guidelines and include patient-centred care, teamwork and collabora-

tion, evidence-based practice, quality improvement and safety, as well as the use of informatics. Altmiller [1] demonstrated how the competencies can be transferred to a nurse specialist role. Patients undergoing surgery are at the highest risk of harm and adverse healthcare events [19]. A reason for this is the surgery team, which often consists of two surgical nurses, an anaesthesia nurse, an anaesthesia physician and at least one operating physician. Each professional must have the competence to manage her/his own professional work and know how to coordinate it with that of the other team members [20]. As lack of coordination and cooperation in the operating theatre poses a threat to PS, teamwork competence must be developed during the NSS education.

Flin *et al.* [21] (p. 1) define non-technical skills as "the cognitive, social and personal resource skills that complement technical skills, and contribute to safe and efficient task performance". Rasmussen *et al.* [22] identified the following set of non-technical skills for surgical nurses: 1) Cognitive skills, which involve making use of knowledge and experiences, understanding the situation, perceiving changes and considering measures; 2) Cooperative skills, which include understanding the division of work in the team, adjusting one's own duties to those of the other team members and ability to communicate; 3) Self-management skills, which encompass exhibiting self-control, a professional manner and working under time pressure; 4) Ethical skills, examples of which are showing respect, contributing to a positive work climate and having a caring attitude towards patients and colleagues.

We focused on the influence of CS on professional development related to PS. In addition, we would like to compare the results of this study with the evidence of PS competencies as recommended by the QSEN (2003), [21], Flin *et al.* [22] Rasmussen *et al.* [22] and Patient Safety Topics as identified by Jha *et al.* [15]. A PS curriculum strengthens the necessary attitudes, behaviours and skills, making it a prerequisite for healthcare education and training to enhance PS [23]. This underlines the importance of evaluating clinical training and the way in which CS influences nursing practice.

Aim

The aim of the study was to evaluate nurse specialist students' views of CS and its influence on their professional competence development. An additional aim was to interpret the results and link them to non-technical skills and Patient Safety (PS) topics. The research question was: What are the benefits of CS focusing on non-technical skills in the area of PS?

2. Methods

2.1. Design

This study had a descriptive-correlational design [24]. Data were collected from NSS in Norway, using a package of instruments to measure the influence of CS, the students' views on the benefit of supervision, as well as their perceptions of the involvement of patients and family members in safe care.

2.2. Sample

All registered NSS (n = 56) taking part in the Postgraduate education at the University College in June 2015 were eligible to participate in the study, which included four healthcare contexts. The questionnaire was distributed to the participants at the end of their clinical placements during the final semester of their education. In total, 46 NSS (8 anaesthesia, 11 intensive care, 14 operation/surgical and 13 oncological care) completed and returned the questionnaire to the first author. The response rate was 82%. The characteristics of the participants are presented in Table 1.

2.3. Measures

The questionnaire included three instruments: the Manchester Clinical Supervision Scale (MCSS) [25] [26], the Effects of Supervision Scale (ESS), [7] designed to measure nurses' views of the effectiveness of CS and the Focus on Empowerment Supervision Scale (FESS) [27], that illuminates user involvement, nursing documentation and the influence of supervision, in addition to providing demographic data.

2.3.1. The Manchester Clinical Supervision Scale

The participants were asked to rate 36 items divided into seven factors; Trust/Rapport, Supervisor advice/support, Improved care/skills, Importance value of CS, Finding time, Personal issues and Reflection (MCSS) [25] [26]. The response alternatives for items such as "Clinical supervision improves the quality of care I give to my patients" and "Supervision gives me time to reflect" ranged from 1 (strongly disagree) to 5 (strongly agree). In a previous study the reliability score

Table 1. Demographic characteristics of the students.

Sample characteristics	N = 46*
Age, years, med (q1 - q3)	36.5 (31.0 - 39.3)
Female gender	42 (91.3 %)
Previous work experience, years, med (q1 - q3)	10.0 (6.0 - 13.3)
Speciality, No (%)	
Anaesthesia	8 (17.4 %)
Intensive care	11 (23.9%)
Operation/Surgery	14 (30.4%)
Oncology	13 (28.3%)
Female supervisor	42 (93.3%)
Supervisor education	
No	7 (15.2%)
Yes	11 (23.9%)
Did not know	28 (60.9%)

*Due to internal missing data, N varies between 44 and 46.

for the full-item scale was 0.86 [26].

2.3.2. The Effects of Supervision Scale

The 25 items from the Effects of Supervision Scale (ESS) were used to measure what the students had learnt in CS. Examples of items are: "I can deal with difficult caring situations", "I realize when I need help from others" and "I can plan more easily together with the patient" [7]. The ESS comprises three sub-scales: Interprofessional skills, Professional skills and Communication skills with responses indicated on a 4-point scale ranging from strongly disagree to strongly agree. The known reliability is 0.96 [28].

2.3.3. The Focus on Empowerment Supervision Scale

The Focus on Empowerment Supervision Scale (FESS) is a 24 item instrument that measures nurses' perceptions of empowerment, documentation, the influence of CS, involving users by preserving their integrity and enabling the participation of the patient and her/his family in decision-making [27] [29]. The participants were asked to rate items on a Likert scale with scores ranging from 1 (strongly disagree) to 4 (strongly agree). Examples of items of pertaining to perceptions of the influence of supervision, documentation and user involvement in the nursing process are: "I am satisfied with the learning situation at my clinical practicum" and "I cooperate with the patient in all parts of the problem-solving process". The two factor solution yielded a Cronbach's alpha score of 0.84 [27].

2.4. Data Analysis

Descriptive and correlational analyses were employed in the analytic procedures. The statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) PC-version 20.0 for Windows [30]. A $P = 0.05$ was considered statistically significant. A factor analysis with varimax rotation [24] was performed to condense the number of the items in the instruments and to identify factors with common characteristics. Cronbach's alpha was applied to established internal consistency. Differences in the responses between the groups were tested by the Mann-Whitney U-test [31] and the Spearman rank correlation coefficient was used to calculate the correlation between the factors.

2.5. Ethical Considerations

The study followed the guidelines for research set out in the Helsinki declaration [32]. The study was approved by the Head of the Institute of Nursing and the Dean of the Faculty of a University College on the east coast of Norway. In addition, the principles of confidentiality, voluntariness and informed consent were adhered to. The participants received information about the purpose of the study and indicated their consent by giving the completed consent form to their principal tutor. The data were stored in accordance with the university regulations. Permission to use the MCSS was obtained from the copyright holder, Dr. J. Winstanley (personal contact, Australia).

3. Results

3.1. Demographic Characteristics of Participants, Frequency of Sessions and Context of Supervision

Of the 46 participants 42 were female, their mean age was 36.5 years (standard deviation (SD); range, 31.0 - 39.3) and they had 10 years of work experience (Table 1). They all had previous experience of supervision but it differed in terms of frequency, as 27 (58.6%) had supervision daily, 14 (30.4%) once a week, three (6.5%) every second week and two (4.3%) once per month during their postgraduate education. The supervision took place during work (n = 27), in a separate room (n = 2) and both settings (n = 17). Furthermore, 31 (70.5%) participants had individual supervision, one had group supervision and 12 (27.3%) reported supervision in both contexts. Regarding whether the agreed supervision time was adhered to, 14 (30.4%) participants answered yes, 28 (60.9%) no and four (8.7%) both. The time devoted to supervision per week was less than 15 minutes (n = 7), 15 - 30 minutes (n = 11), 31 - 45 minutes (n = 8), 46 - 60 minutes (n = 3) and over 60 minutes (n = 16). The perception of sufficient time for supervision was reported by 23 (50%) of the participants, while 23 (50%) stated that it was not insufficient. Factor analysis and Cronbach's alpha coefficients of the students' (N = 46) views on CS are presented in Table 2.

The most important factors from the MCSS regarding the need for more supervision were: Trust/Rapport, Supervisor advice and Finding time. The participants who wanted more supervision had significantly lower scores on the FESS factors: Supporting yet challenging relationship (p-value 0.004) and Preparatory and confirming professional relationship (p-value 0.002), Table 3.

3.2. Students' Perceptions of the Quality and Effectiveness of Clinical Supervision

To evaluate the quality and effectiveness of CS the instrument labelling and the sub-scales are described in Table 4. This structure explained 67.3% of the variance.

3.3. Spearman's Correlations between the Manchester Supervision Scale and Other Factors

A highly significant association was found between Trust and Interpersonal skills (P = 0.001), (r = 0.50) as well as between Reflection, Professional and Communication skills (P = 0.001), (r = 0.50).

Furthermore, associations were found between Supervisor advice and the factors Supportive yet challenging, Preparatory and confirming professional relationship, and Interpersonal, Professional and Communications skills (P = 0.001), (r = 0.70). There were no associations between Finding time and the factors: User involvement, Influence of supervision and the Effects of Supervision Scale, Table 5.

4. Discussion

The aim of this study was to evaluate nurse specialist students' views of CS and

Table 2. Factor loading, Cronbach's alpha coefficients (α) and explained variance of the students' (N = 46) views on clinical supervision (MCSS).

Items	Factor loading
Factor 1 Reflection *α* 0.80	
Q 11 Reflection gives me time to "reflect"	0.86
Q 33 CS Improves the quality of care I give to my patients	0.82
Q 31 CS sessions motivate staff	0.75
Q 13 CS sessions facilitate reflective practice	0.67
Q 36 I think receiving clinical supervision improves the quality of care I give	0.66
Q 12 Work problems can be tackled constructively during CS sessions	0.61
Q 30 Without CS the quality of patient care would deteriorate	0.48
Factor 2 Finding time *α* 0.74	
Q 22 My supervisor provides me with valuable advice	0.90
Q 20 I learn from my supervisor's experiences	0.81
Q 24 Sessions with my supervisor widen my clinical knowledge base	0.78
Q 27 My supervisor acts in a superior manner during our sessions	0.67
Q 23 My supervisor is very open with me	0.60
Q 26 My supervisor puts me off by asking about sensitive issues	0.57
Q 19 My supervisor is never available when needed	0.55
Factor 3 Importance *α* 0.78	
Q 10 CS sessions are intrusive	0.87
Q 28 CS is for newly qualified/inexperienced staff only	0.77
Q 3 CS sessions do not solve anything	0.76
Q 7 I find supervision sessions time-consuming	0.66
Q 25 Supervision is unnecessary for experienced/established staff	0.57
Q 29 Clinical supervision makes me a better practitioner	0.54
Q 4 Time spent on CS takes me away from my real work in the clinical area	0.50
Q 6 Fitting in CS sessions can lead to more pressure at work	0.49
Factor 4 Trust/Rapport *α* 0.83	
Q 6 Fitting in CS sessions can lead to more pressure at work	0.45
Q 2 It is difficult to find the time for CS sessions	0.89
Q 1 Other work pressures interfere with CS sessions	0.87
Factor 5 Supervisor advice *α* 0.78	
Q 34 I can widen my skills base during my CS sessions	0.80
Q 35 My supervisor offers me guidance on patient care	0.67
Q 15 My supervisor offers an "unbiased" opinion	0.51
Q 32 I feel less stressed after seeing my supervisor	0.45

Continued

Factor 6 Personal issues	α 0.48
Q 17 Having someone different to talk to about personal issues is a great help	0.68
Q 18 My CS sessions are an important part of my work routine	0.66
Q 21 It is important to make time for CS sessions	0.55
Q 9 CS does not solve personal issues	0.43
Q 5 I can 'unload' during my CS sessions	0.42
Factor 7 Improved care	α 0.80
Q 16 I can discuss sensitive issues encountered during my clinical casework with my supervisor	0.65
Q 8 My supervisor gives me support and encouragement	0.62
Q 14 If there is something I don't understand there is always someone to ask	0.60
Explained variance (%), F1 = 72.9; F2 = 53.3; F3 = 52.3; F4 = 50.0; F5 = 50.0; F6 = 49.3; F7 = 48.3.	

MCSS = Manchester Clinical Supervision Scale. Cronbach alpha total = 0.80.

its influence on their professional competence development. An additional aim was to interpret the results and link them to non-technical skills and Patient Safety (PS) topics. The research question was: What are the benefits of clinical supervision focusing on non-technical skills in the area of PS? Data were collected from 46 NSS using a package of instruments to measure the influence of CS.

CS factors that influenced the competencies of the NSS were: interpersonal, professional and communication skills, in addition to ethical skills, the importance of teamwork and awareness of the need to involve patients and their family members in safe care. Table 6 illustrates the linkages between the results of CS, non-technical skills, patient safety competencies and patient safety topics.

Despite an average of 10 years' of experience as nurses the NSS expressed the need for more CS. The NSS context is entirely different and they have new roles and functions. Their increased responsibilities give rise to a sense of insecurity. The CS of these students has traditionally focused on technical skills using a hands-on approach. There is a need to pay more attention to non-technical skills development in order to safeguard patients. CS can serve as a forum for reflection where together with their supervisor. NSS are enabled to review situations, identify what succeeded or failed and what to do on the next occasion. It is through reflection that individuals grow as professionals and develop non-technical skills [1]. The supervisors should help by challenging the behaviour of NSS in order to promote communication and teamwork skills. According to McCabe [33], nurses communicate well with patients when they use a person-centred approach. However, the ability to do so is heavily influenced by the work and culture in the organization. Interest in non-technical skills has increased in healthcare in line with the focus on increased PS to reduce the number of ad-

Table 3. Factors, mean rank and p-value for nurses who wanted more supervision.

Factor	Supervision frequency	N	Mean Rank	P-value
Trust/Rapport	0 No	23	28.9	0.002
	1 Yes	22	16.7	
	Total	45		
Supervisor advice/support	0 No	23	29.5	0.001
	1 Yes	22	16.2	
	Total	45		
Improved care	0 No	22	23.6	0.776
	1 Yes	23	22.5	
	Total	45		
Importance/ Value of supervision	0 No	22	20.5	0.306
	1 Yes	22	24.4	
	Total	44		
Finding time	0 No	23	16.8	0.001
	1 Yes	23	30.1	
	Total	46		
Personal issues	0 No	22	22.1	0.850
	1 Yes	22	22.8	
	Total	44		
Reflection	0 No	23	24.9	0.296
	1 Yes	22	20.9	
	Total	45		
Influence supervision F1 Supportive yet challenging supervision	0 No	23	28.4	0.004
	1 Yes	22	17.3	
	Total	45		
Influence supervision F2 Preparatory and confirming professional relationship	0 No	23	28.9	0.002
	1 Yes	22	16.8	
	Total	45		
User involvement F1/Preserving integrity	0 No	23	23.5	0.790
	1 Yes	22	22.5	
	Total	45		
User involvement F2/ Protecting participation of patients and family members	0 No	23	24.5	0.422
	1 Yes	22	21.4	
	Total	45		
Interpersonal skills	0 No	23	26.8	0.900
	1 Yes	22	20.1	
	Total	45		
Professional skills	0 No	23	26.2	0.165
	1 Yes	23	20.8	
	Total	46		
Communication skills	0 No	23	24.9	0.475
	1 Yes	23	22.1	
	Total	46		

Table 4. Included factors, Medians, Quartiles and Cronbach's alpha.

Included factors	Medians	Quartiles (Q1, Q3)	Cronbach's alpha
MCSS Trust/Rapport (15 - 35)	29	(24.5, 32.1)	0.825
MCSS Supervisor advice/support (15 - 30)	25	(22.0, 28.0)	0.783
MCSS Improved care/skills (16 - 35)	28	(25.0, 31.0)	0.800
MCSS Importance/Value of CS (6 - 19)	9	(6.0, 10.8)	0.777
MCSS Finding time (4 - 20)	11	(8.0, 13.0)	0.737
MCSS Personal issues (3 - 14)	8.5	(7.0, 10.0)	0.475
MCSS Reflection (5 - 15)	12	(10.0, 14.0)	0.800
FESS Influence Supervision F1 (7 - 20)	15.0	(12.0, 17.0)	0.842
FESS Influence Supervision F2 (4 - 12)	9.0	(7.0, 11.0)	0.637
FESS User involvement F1 (4 - 16)	14	(12.0, 16.0)	0.878
FESS User involvement F2 (3 - 12)	11	(9.0, 12.0)	0.775
ESS Interpersonal skills F1 (14 - 44)	35.5	(31.0, 39.3)	0.899
ESS Professional skills F2 (15 - 44)	33	(30.0, 37.0)	0.875
ESS Communication skills F3 (3 - 12)	10	(8.0, 11.0)	0.828

Table 5. Spearman's correlations between the MCSS and other factors.

MCSS	Trust/Rapport	Supervisor advice	Improved care	Importance	Finding time	Personal issues	Reflection
FESS *User involvement*							
Preserving integrity	0.373*	0.459**	0.285	−0.208	−0.004	0.066	0.313*
Protecting participation of patients and family members	0.349*	0.302*	0.211	−0.315*	−0.085	−0.070	0.253
Influence of supervision							
Supportive yet challenging relationship	0.761***	0.765***	0.250	−0.067	−0.173	0.205	0.145
Preparatory and confirming professional relationship	0.596***	0.549***	0.024	0.019	−0.311*	0.116	−0.034
ESS							
Interpersonal skills	0.503***	0.561***	0.353*	−0.073	−0.190	0.401**	0.373*
Professional skills	0.431**	0.519***	0.375*	−0.070	−0.150	0.405**	0.500***
Communication skills	0.249	0.403**	0.439**	−0.152	−0.098	0.457**	0.572***

*P => 0.05; **P =< 0.01; ***P =< 0.001.

Table 6. The benefits of CS, non-technical skills, patient safety competencies and patient safety topics.

The benefits of CS	Non-technical skills and patient safety competencies[1,2]	Patient Safety topics[3]
Interpersonal skills	Trustful relationships	Safety Culture
Professional skills	Self- management, situation awareness and decision making	Safety Culture
User involvement and ethical skills	Patient-centred care and responsibility	To bring the patients' voices and experiences into the patient safety agenda.
Communication skills, reflection	Cognitive skills	Availability and transfer of appropriate knowledge.
Teamwork	Communication, teamwork and collaboration	Safety Culture

1) Flin *et al.* [21]; 2) Rasmussen *et al.* [22]; 3) Jha *et al.* [15].

verse events [21]. De Vries *et al.* [19] found that 41% of all adverse events in hospitals occurred in the operating theatre. Furthermore, the authors linked these events to the failure of team cooperation [34]. According to Mc Culluch [35], reasons for the high rate of adverse events in the operating theatre are that the environment is perceived as stressful by staff and communication between team/staff members is difficult. Non-technical skills training resulted in improved attitudes to safety [35]. Professional skills on the part of NSS can be interpreted as linkages to their capacity for self-management, situational awareness and decision-making. According to Flin *et al.* [21], situational awareness can be explained simply as "knowing what is going around you". The terms situational awareness and situation assessment are often used synonymously. Flin *et al.* [21] defined situational awareness as the cognitive process for building and maintaining awareness of a workplace situation or event. The authors also described situational awareness as the first stage of decision-making, defined as the process of reaching a judgement or choosing an option, sometimes called a course of action, to meet the needs of a given situation. Elements of situational awareness can be situation assessment i.e., defining the problem, generating and considering one or more response options, selecting and implementing an option and reviewing the outcome [21]. All aspects can be seen as referring to care models such as patient-centred care and safety culture.

Despite the fact that the result of the present study revealed the importance and positive outcomes of CS for the development of PS competencies, there is still a room for improvement. The participants reported differences in the frequency of CS. Over half of the NSS stated that they were not offered enough time for CS. The participants who wanted more supervision had significantly lower scores on the factors; Supporting yet challenging and Preparatory (P = 0.004), confirming professional relationship (P = 0.002).These findings are confirmed by the study of Amsrud *et al.* [28] and their evaluation of undergraduate nursing students. Nursing universities are responsible for NSS programmes. In order to provide clinical supervisors with improved understanding and CS skills, the universities should devote more effort to "designing and providing" educational programmes for clinical supervisors. The supervisors must be made more

aware of the actual importance of their supervision, particularly in terms of the development of non-technical skills. CS must be given priority in the organisation as it increases the focus on PS and safety culture. This is supported by Gordon *et al.* [36] who concluded that education in the use of non-technical skills can improve PS. There can be various reasons for the lack of time for CS. Clinical supervisors are usually not relieved from ordinary patient work. Finding time for CS and reflection should therefore be given high priority by management and clinical leadership. Johns [37] claims that clinical leadership is a cornerstone for the development of nursing and healthcare practice. The clinical leader is responsible for facilitating development, supporting/promoting staff competence, clinical practice and ensuring the quality of care.

Limitations of the Study

This study has some limitations. Data collection only took place on one occasion by means of the questionnaire and the sample of students was relatively small. The latter was unavoidable as the sample comprised almost all students in the class. For future research we recommend the inclusion of a larger group. The results are only valid for the study group. It would be of interest to compare different groups of students at postgraduate educational level such as master level. A mixed method design combining interviews and a questionnaire with open ended questions would be ideal for focusing on PS issues [24].

5. Conclusion

CS is crucial for development of non-technical skills and patient safety competencies among NSS. However, finding the time to reflect and learn from the supervisors was reported to be problematic. Thus, there is potential for quality improvement. We recommend that nursing universities should provide formal educational programmes for supervisors focusing on the students' professional development, especially non-technical skills. Management and clinical leaders should give higher priority to CS in order to enhance PS.

Contributions

The study was designed by E.S. and A.L. coordinated the research. E.R. and A.L.J. performed the data collection. E.R. and A.L.J. contributed to the study conception and literature search, supported by the specialized librarian at the university college. All authors in the research team participated in the data analysis. A.L. and E.S. were responsible for drafting the manuscript. All authors contributed to the intellectual content of the paper. The study was supervised by E.S. and A.L.

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