Supervision in Clinical Practice Indicator: Evidence Based Practice in the Context of Outpatient Surgery

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Abstract

Clinical supervision and evidence-based practice in nursing should be understood as complementary and indissociable as they go hand in hand towards the same objectives. Therefore, the supervising process should boost the evidence-based practice in order to promote better nursing care. The purpose of this study was to evaluate nurse's predisposition to incorporate evidence-based practice into their care and to identify barriers to its application with the purpose of proposing contributions for the implementation of a nursing clinical supervision model that encourages the use of the best evidence available into the daily practice. The study is integrated into the research project "*SAFECARE – Supervisão Clínica para a segurança e qualidade dos cuidados*". It was developed as an exploratory-descriptive study in an ambulatory surgery unit of a University Hospital in Porto, Portugal. It had a target population of 59 nurses, and it was used the "Evidence-Based Practice Questionnaire" as a method of collecting data. From the 49 questionnaires collected, we find that the subscale "Practices" has an average score of 4.89, the subscale "Attitudes" 5.36 and the subscale "knowledge/skills and competences" 5.08.

These results showed that nurses have a low use of evidence-based practice when compared with the level of knowledge, skills and competences shown, although they seem to have a positive attitude towards this subject. These results can be partially explained by the overburden felt by the n urses, which identified the lack of time and motivation, but also inappropriate training and scarcity of team meetings and proper tools in the workplace as barriers.
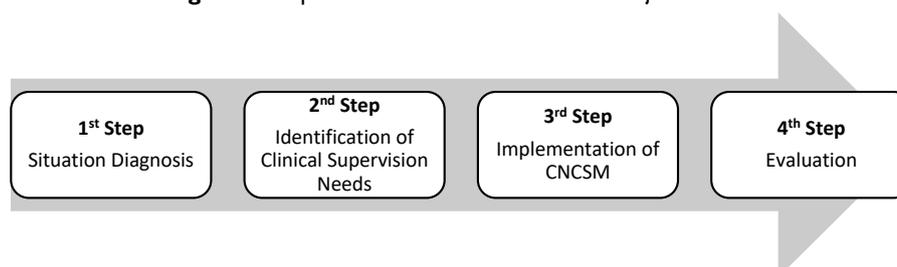
Introduction

Currently, in Portuguese health care institutions it is not yet possible to verify a standard use of clinical supervision in nursing practice. In order to overcome that limitation, the SAFECARE Project has been developed. It aims to implement a Contextualized Nursing Clinical Supervision Model (CNCSM) in different departments of several Portuguese hospitals to promote the safety and quality of nursing care.

The SAFECARE project results from a partnership between the Escola Superior de Enfermagem do Porto (ESEP) and the Centro Integrado de Cirurgia de Ambulatório (CICA) and it is based on four structuring axes: context (refers to the set of elements and circumstances where care is developed and provided), nursing care (focuses on the interpersonal relationship between a nurse and a client, or between a nurse and a group of clients), professional development (refers to the nurse's need in continuing their training during their professional activity that meets their personal goals, care clients, and context/organizational culture) and clinical supervision (based on concept defended by the Portuguese Nurses Order).

The SAFECARE project includes four steps (Figure 1). In the first one, a diagnosis of the current situation is performed to assess sensitive indicators to the nurse's personal and professional practice. This sensitive indicator will be important during the implementation of the project because they can serve as process indicators, and later, in the last phase of the project, they will be evaluated as results indicators. In the second step, the main objective is to identify the clinical supervision needs felt by nurses. This is a fundamental step because, in addition of identifying the nurse's needs, it allows the effect of an "ice breaker" between all the participants, which is important for professionals to establish bonds of trust in the process. On the third step, the CNCSM is implemented: group supervision sessions between the supervisors and the supervisees take place. In this third phase, nurses have the chance to discuss various work problems and doubts, related to their daily routine so they can feel more secure and supportive. In the four and last step, the process of the CNCSM implementation is evaluated. In order to do that, the indicators found has sensitive towards the process of clinical supervision are again evaluated with the same "modus operandi".

Figure 1 Steps of CNCSM from SAFECARE Project.

1st Step	2nd Step	3rd Step	4th Step
Situation Diagnosis	Identification of Clinical Supervision Needs	Implementation of CNCSM	Evaluation

Several indicators were found to be sensitive to the clinical supervision process, and once this project was set in an ambulatory surgery unit, the chosen indicators were post-surgical pain, surgical wound and clinical efficiency and evidence-based practice. This, has was already referred, were the topics used to evaluate the effectiveness of the Clinical Supervision process.

The concept of Clinical Supervision in Nursing (CSN) is not yet agreed between different authors, with some definitions based on the objectives and purposes of the CSN, others focusing in the supervised person, the supervising strategies or even in the relations that emerge in the process. However, despite those differences, most authors agree that the main objective of Clinical Supervision is the constant improvement of work developed by nurses. Therefore, we can consider that Clinical Supervision is a formal way of accompaniment and development with the aim to promote the security and quality of nursing care (1). This definition goes along with the definition of the Department of Health that define Clinical Supervision as a "formal process of professional support and learning which enables practitioners to develop knowledge and competence, assumes responsibility for their own practice and enhance safety of care in complex situations". For Butterworth & Faugier (2), it is also an exchange between practitioners who enable them to develop their professional skills.

According to the literature review, clinical supervision is crucial for the quality of nursing care and it is an important mechanism to support nurses in their clinical practice.

Concerning Evidence-based practice (EBP), authors designate the concept as being a methodological approach that promotes health care delivery from clinical decision-making based on the best evidence available, clinical expertise and patients' preferences and values, in the context of the available resources (3).

It is crucial to implement mechanisms that support nurses in clinical practice, in order to promote reflective questioning. Individual and organizational Evidence-based practice (EBP) change efforts are more likely to succeed and carry when reflective practice is part of the organizational culture.

That way, evidence-based practice has positive outcomes, such as improved quality of care and patient outcomes and lower hospital costs with a safe practice environment.

Authors' findings confirmed that nursing education and namely specialization degree are associated with a positive attitude towards EBP, positive intentions to use research in practice and is also a key predictor of the self-reported EBP competencies.

Commonly, nurses have a positive attitude towards EBP. Although it remains a poor intake of the application and implementation of the process, leading researchers to analyze barriers and facilitators to EBP adoption. Clinical supervision plays a crucial role in professional development through reflective practice and also regarding clinical excellence, quality improvement activities and patient safety. In this way, it is important to examine the relationship between clinical supervision and EBP competency.

Evidence-based practice should embrace different types of knowledge, and it's very important to complement the evidence derived from clinical research with the knowledge acquired with the clinical expertise. To do so it's necessary that all this knowledge is shares so it can be analysed and developed. The Clinical Supervision can play a major role in promoting the EBP because it not only helps the nurses to reflect its practices, but also promotes the fusion of the knowledge's derived from different sources (4).

For Melnyk et al (5), it may be unreal to expect bedside nurses to add EBP activities to their daily practice if they are not compensated for the time and have the support of prepared nurses to serve as EBP mentors.

There are barriers and facilitators to EBP adoption at the individual and organizational levels. At a nurse-level factor the lack of EBP knowledge and skills, negative attitudes toward research, perceived or real lack of support and beliefs about organizational readiness for EBP can be a negative factor toward EBP. Solutions to the barriers need to be guided to the dimension where the barrier occurs while recognizing that multidimensional approaches and are crucial to the success of overcoming these barriers, involving nurses, managers and the organization.

The relationship between EBP research and quality improvement (QI) research are distinct but related areas. QI activities can provide the local context for EBP efforts. One of the objectives of QI is empowering its practitioners to improve quality on a daily basis.

In Portugal, clinical supervision in nursing is not yet a daily practice, and there are still few national studies conducted in this area. Nurses in clinical practice need to demonstrate flexibility and be ready for complex and demanding situations. Health benefits can be attained through clinical supervision since nurses are able to develop their expertise, improve and develop the quality of the care they provide to their clients, reduce stress, optimize their coping resources and emotional intelligence skills. Thus, the awareness of nurses regarding their place in the organization and in the continuous improvement politics, is fundamental. Clinical supervision plays a crucial role in professional development through reflective practice and also regarding clinical excellence and patient safety. In this way, it is important to explore the relationship between clinical supervision and EBP competency.

Objectives

The main objective of this study was to evaluate nurses' predisposition to incorporate evidence-based practice into their care, analyzing this predisposition with some sociodemographic, academic and professional variables and identify barriers to the implementation of EBP into their worksite. This will enable to propose contributions for the implementation of a nursing clinical supervision model that encourages the uses of the best evidence available into the daily practices into their workplace, which will improve the security and quality of the nursing care.

Methods

This is an exploratory descriptive study, that took place in an ambulatory surgery unit in a University hospital in Porto, Portugal and it is derived from the broader research project "Clinical Supervision for the Safety and Quality of Care" (SAFECARE). The study population was the unit's nursing staff.

The Evidence-Based Clinical Efficacy and Practice Questionnaire (QECPBE-20) was developed by Upton and Upton in 2006 and translated and validated for the Portuguese version by Pereira et al (6). This questionnaire is split into three subscales: practices, attitudes, knowledge / skills and competences, and it was used as the data collection instrument for this study.

The "Evidence-Based Practice Questionnaire" (EBPQ), makes it possible not only to evaluate practices, attitudes, knowledge, abilities and skills but also the support of nursing interventions in order to improve them and the professionalism of nursing staff. It can be useful for the development and evaluation of educational programs, policy developments and for the management of initiatives for nurses and other healthcare professionals. The original version is constituted by 24 questions that are evaluated by a differential semantic scale,

organized in three dimensions. The first one evaluates practices, using Likert scale that goes from 1 (never) to 7 (usually), that incorporate 6 items. The second component evaluates attitudes, by verifying the proximity of position adopted in each pair of questions, in a total of 4 items. Finally, the third dimension aims to evaluate knowledge or abilities and skills through a Likert scale, that goes from 1 (the worst) to 7 (the better), in a total of 14 items.

The QECPBE-20 was based on the recognition of the applicability in the Portuguese reality and contemplates only 20 items and statistical values that are superior when compared to the Spanish version. In this study the following open-response question was added to the QECPBE-20: "In your opinion, what are the main barriers / obstacles to an evidence-based practice?" which has been included to identify barriers and obstacles to EBP and it is possible to produce contributions to minimize these same difficulties identified by professionals.

The modified questionnaire is constituted by 3 dimensions: practices, attitudes, knowledge/abilities and skills. The first dimension evaluates practices using a Likert scale that goes from 1 (never) to 7 (usually), that incorporate 6 items. The second component evaluates attitudes, by verifying the proximity of position adopted in each pair of questions, in a total of 3 items. Finally, the third dimension aims to evaluate knowledge or abilities and skills through a Likert scale, that goes from 1 (the worst) to 7 (the better), in a total of 11 items.

The present study is part of a larger work, granted authorization by the Ethics Committee of the university hospital and all the participants involved. Participants' consent was considered valid after the submission of the completed questionnaire. The remaining ethical considerations were guaranteed and secured, namely, anonymity and confidentiality of the data. The objectives of the study and contact of the researcher were clearly stated in the cover page of the instrument.

All data was processed using the IBM SPSS software version 24.0. In a first step, the data was submitted to descriptive statistics, analysed its distribution through measures of central tendency, distribution, symmetry, kurtosis and the presence of outliers. The total score of the QECPBE-20 scale, as well as the dimensions, was obtained by the following expression: the sum of the items of the dimension or scale/ number of items of the dimension or scale). An exploratory factor analysis of the QECPBE-20 scale was performed and the extraction of the main components using varimax rotation was applied. The number of factors to be preserved was obtained using the eigenvalue criterion (factors retained for values greater than 1). The saturation of each item was considered to determine the factors, and each item was added to the factor with the highest factorial weight. The variance of each dimension and factors was also calculated.

The exploratory data analysis was performed using descriptive statistics and factorial validity and internal consistency of the questionnaire were evaluated using factorial confirmatory analysis and Cronbach's alpha coefficient. Finally, t-Student and ANOVA tests were performed to compare results between groups, considering sociodemographic and academic variables.

Internal consistency was assessed using item total correlations and Cronbach's . Construct validity was assessed by comparison of questionnaire scores and an independent measure of awareness of a local clinical effectiveness initiative.

Afterwards, an analysis was performed whether to verify if the QECPBE-20 fit the three-factor model suggested by Pereira (6), using AMOS version 24.0. The analysis was conducted with 20 observed variables, 23 unobserved variables and 3 latent variables. In order to estimate the parameters of each item, to scale each factor, the variance was set at 1. The covariance matrix was considered as

input, applying the Maximum Likelihood Method of estimation. The existence of outliers was examined by the squared Mahalanobis distance and normality, by the coefficient of asymmetry and univariate and multivariate kurtosis. No asymmetry values were found <a |3| and kurtosis <a |10|. The quality of the fit model was conducted according to the index and respective reference values. The local fit was evaluated by the factorial weights and the individual reliability of the items. The Comparative Fit Index (CFI), Root Mean Square Approach (RMSEA), and confidence intervals (CI) were also considered. The fit of the model considered the theoretical considerations.

The analysis of the linear association between the dimensions and the total scale as well as between scales was executed using the Pearson correlation coefficient. The identification of potential predictive factors (gender, age, professional practice, academic qualifications, the legal status of employment, and place of work, time of service, professional experience and training in clinical supervision) of the full scale, as well as of each one of the dimensions was performed by simple linear regression. Finally, adjusted linear regression models were done in order to identify factors independent of each of the dimensions and of the total scale.

The cross-sectional study has a target population of fifty-nine nurses, being this non-probabilistic sample intentional. From the population eight nurses were excluded from the study due to prolonged absence from the service and two did not respond. Everyone involved in the study signed an informed consent.
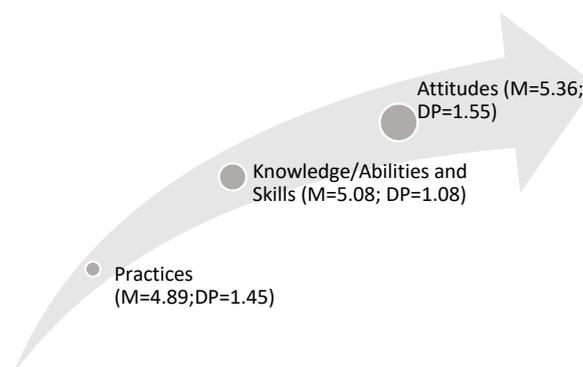
Results

Forty-nine nurses (96% of the unit's nursing staff) participated in the study, 93% were female, average age was 44 years and average professional exercise time was 20 years. Of the respondents, 80% are nurses and 20% are specialist nurses. The percentage of nurses without experience or training in clinical supervision is 90%.

The analysis of the results (Table 1) prove that the nurses in this study had the highest score and considered more favourable to the EBP, the subscale "Attitudes" (M=5.36), followed by the dimension "Knowledge /skills and competences" (M=5,08) and the dimension "Practice" (M=4.89).

Table 1 Analysis of the results subscale Attitudes, Knowledge/abilities and skills, Practices.

	QECPBE-20 (Present study)	QECPBE-20 (Pereira, 2016)
Subscale "Attitudes"	M=5.36; DP=1.55	M=5.98; DP=0.97
Subscale "Knowledge/ abilities and skills"	M=5.08; DP=1.08	M=5.07; DP=0.90
Subscale "Practices"	M=4.89; DP=1.45	M=4.43; DP=1.38

Attitudes (M=5.36; DP=1.55)

Knowledge/Abilities and Skills (M=5.08; DP=1.08)

Practices (M=4.89;DP=1.45)

Regarding the internal consistency the original version of the QECPBE presents the results in three subscales: Practices (= 0.85); Attitudes (= 0.79); Knowledge / Skills and Competencies (= 0.91); and has overall internal consistency of = 0.87.

Pereira's study (2005) using QECPBE-20, obtained the follow values: Practices = 0.74, Attitudes = 0.75, and Knowledge/abilities and skills = 0.95, showing an intern consist of = 0.74.

Through the table (Table 2) it is possible to verify that the present study presented an internal consistency superior to the original version of the QECPBE and the study of Pereira 6: Practices (= 0.930); Attitudes (= 0.915); Knowledge / Skills and Competencies (= 0.967).

Table 2 Dimensions Internal consistency in each study.

	Internal consistency (Chronbach's alpha)		
	Present study	**Upton and Upton (2006)**	**Pereira (2015)**
Subscale "Practice"	α=0.930	α=0.85	α=0.74
Subscale "Attitude"	α=0.915	α=0.79	α=0.75
Subscale "Knowledge/ Abilities and Skills"	α=0.967	α=0.91	α=0.95

The assessment of the linear association between the dimensions and the scale was also performed (Table 3) (near here), and the dimensions were positively and significantly correlated with each other and with the total scale ($p<0.001$ for all calculated correlations). The "Knowledge" dimension displays the highest correlation with the total scale (r=0,670), with the "Attitudes" dimension having the lowest correlation (r=0,442). The Practices/ Knowledge pair is the one with the highest correlation (r=0,511).

Table 3 Correlation between subscales.

	Correlation between subscales (Person correlation coefficient)	
	Knowledge/Abilities and Skills	**Attitude**
Practice	r = 0.670; p = 0.002 (Pereira, 2015 r=0,47; p = 0,001)	r = 0.442; p < 0.001 (Pereira, 2015 r=0.23; p < 0.001)
Attitude	r = 0.511; p < 0.001 (Pereira, 2015 r=0.21, p < 0.001)	

Through the open response question the following barriers to the adoption of EBP were identified by 20% of respondents: Excess of weekly working hours; Lack of time for care; Lack of professional motivation; Lack of training of nurses regarding EBP; Lack of team meetings to exchange experiences; Lack of adequate tools in the workplace.

With the intention of identifying potential predictors for the full scale and for the dimensions, the linear regression models (fit and unfit) were calculated. Considering the academic degrees Bachelor and Licentiate, these study results show that participant nurses with a Specialty presented higher score values on the "Attitudes" dimension than participants with only a Bachelor or Licentiate degree, when fit to the spare variables. Only 6.8% of the variation on the "Attitudes"

dimension can be attributed to the variables that integrate the fit model.

From our sample, the nurses are favourable to an EBP, with the dimension Attitude reaching the highest average score, followed by Knowledge and Skills and finally the dimension Practice. Participants with training in Clinical Supervision showed higher values on the dimension Knowledge than participants with no Clinical Supervision training. On the other hand, the nurses with a Specialty presented higher score values on the dimension "Attitudes" than the others.

On the other hand, participants with training in Clinical Supervision presented higher values on the "Knowledge" dimension than the participants without Training in Clinical Supervision, when fit to the remaining variables. Only 9.5% of the variation of the "Knowledge" dimension can be attributed to the variables that integrate the fit model.

Discussion

The analysis demonstrated empirical evidence on the questionnaire, being valid and adequate for use in the Portuguese context, with robust internal consistency. Given the results obtained, the dissemination and systematized use of QECPBE-20 can be promoted.

The satisfactory results of this validation process reinforce its importance, considering, above all, the respective practical implications. These can be verified at several levels, such as in education, promoting skills and abilities, and in the direct provision of care or nursing research itself, involving professionals. The evaluation of practices, attitudes, knowledge and skills should be a structural support strand and a foundation in the definition of personalized and targeted interventions to specific organizational groups and contexts, aiming to promote and stimulate PBE among nurses.

The participants in this study report a positive attitude towards EBP, recognizing it as a key element to support practice. Similar results were also found by Pereira (6).

Nevertheless, there are a lot of obstacles that force an effective EBP application on regular bases. Nurses' believe that EBP is important to professional development and to improve care. It is vital to assess nurse's attitudes, barriers and practices in terms of EBP to outline tailored and specific interventions regarding EBP promotion and dissemination. Among these, academic qualification/long life learning and the organizational commitment seem to be key elementarily.

Our findings support that level of nursing education, namely specialization degree, is related with a positive attitude towards EBP. But also, higher levels of education and certification are associated with positive intentions to use research in practice. Other authors further refer to education as a key predictor of the self-reported EBP competencies (5). On the other hand, participants with training in Clinical Supervision presented higher values of knowledge dimension than participants without it, which demonstrates that clinical supervision can play an important role in the development of evidence-based practice competency. It becomes fundamental to implement mechanisms that support nurses in clinical practice, in order to promote reflective questioning. Without it, individual and organizational EBP change efforts are not likely to succeed and sustain5. Also, cultivating the spirit of critical thinking, promotes positive attitudes and beliefs for the development of EBP competency.

This study happened in a university hospital in Portugal and our sample does not have representativeness and was not randomized.

The fact that the study was done in a single hospital organization should be considered another possible limitation. Thus, it is accepted the importance of carrying out further studies, in other contexts,

regarding primary health care, to verify results with concordant or divergent values.

Despite these limitations, important data was revealed and showed us the importance of the implementation of a clinical supervision model for the development of EBP competence in our context.

Even with the limitations of our study, it shows the importance of some key predictors for the development of EBP competence, such as educational level and clinical supervision.

Future research is required to explore the relationship between the implementation of a clinical supervision model and the development of EBP competency, namely, attitudes and beliefs, by promoting reflective practice and also supporting individual and organizational changes.

However, this study has implications also at other levels: continuing education and training, professionals' accountability and awareness and the need for greater organizational support. Behavioural changes are likely to occur; however, it requires a systemic vision at various levels, including teamwork, organizations and even the working environment from a comprehensive perspective.

This study enhances the importance of clinical supervision in daily practice as a key factor for the development of EBP competence, which brings us closer to the development and testing of tailored interventions using clinical supervision as important support for individual/behavioural and organizational change in practising nurses.

Conclusion

This study found higher average scores for all dimensions of the questionnaire than previously reported by Pereira (7). However, several limitations to EBP were identified by the participants. Another situation that should also be part of our concern as a possible limitation of the study, is related to the fact that the sample is constituted only by professionals from just one hospital institution, even though it was used a large sample insert in an academic context. In order to overcome those limitations, it has been considered the importance of creating future studies applied to other contexts, in order to verify if the results are similar or divergent.

All in all, this study also supports the importance of the local implementation of protocols for clinical supervision in nursing practice in order to improve evidence-based practice and ensure quality care in the ambulatory surgery setting.

In all studies it is possible to verify that Attitudes dimension presents most favorable dimension to EBP, showing the higher scores with a M=5.36 in the present study, followed by Knowledge/abilities and skills (M=5.08) and finally Practices (M=4.89).

This study enhances the importance of clinical supervision in daily practice as a key factor for the development of EBP competence, which brings us closer to the development and testing of tailored interventions using clinical supervision as an important support for individual/behavioural and organizational change in practising nurses and APNs.

Still, the level of nursing education, namely specialization degree, is associated with a positive attitude towards EBP. In addition, participants with training in Clinical Supervision showed higher values of knowledge dimension.

Clinical supervision can play an important role in the development of evidence-based practice competency.

We can conclude that, the evaluation of practices, attitudes, knowledge / skills and competences should be a structural support strand and a foundation in the definition of personalized interventions directed to specific groups and organizational contexts, aiming to promote and stimulate PBE among nurses.

References

1. Ordem dos Enfermeiros (OE). Caderno Temático - Modelo de Desenvolvimento Profissional: Fundamentos, processos e instrumentos para a operacionalização do Sistema de Certificação de Competências. Ordem dos Enfermeiros. 2010
2. Butterworth, T & Faugier, J. (1992). *Clinical supervision and mentorship in nursing*. London: Chapman and Hall.
3. DiCensor A, Cullum N, Ciliska D, Evidence Based Nursing. (1998). *Implementing Evidence-Based Nursing: Some Misconceptions*. Chap 2, 9-17.
4. Rycroft-Malone Jo et al. - What counts as evidence in evidence-based practice? *Journal of Advanced Nursing* 2004;**47**:1:81–90.
5. Melnyk, B. M., Gallagher-Ford, L., Long, L. E., & Fineout-Overholt, E. (2014). The establishment of evidence-based practice competencies for practicing registered nurses and advanced practice nurses in real-world clinical settings: proficiencies to improve healthcare quality, reliability, patient outcomes, and costs. *Worldviews Evid Based Nurs.* 2014;**11(1)**:5-15.
6. Pereira R, Guerra A, Cardoso M et al. Validation of the Portuguese version of the evidence-based practice questionnaire. *Revista Latino-Americana de Enfermagem*, 2015;**23(2)**: 345-51.
7. Pereira, Rui. *Enfermagem Baseada na Evidência: Atitudes, Barreiras e Práticas*. Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, 2016. Tese de Doutoramento.