Development of nurses' evidence-based practice skills: contributions of clinical supervision*

Desenvolvimento de competências de prática baseada em evidência dos enfermeiros: contributos da supervisão clínica

ABSTRACT

Objective: to evaluate the impact of the implementation of the SafeCare Model on the evidence-based practice competencies of nurses. Methods: mixed method characterized by concomitant triangulation. Quantitative data were collected before and after the implementation of the Model, by means of the Clinical Effectiveness and Evidence-Based Practice Questionnaire, with descriptive statistical analysis. Evidence values were obtained using the Wilcoxon test. Thirteen nurses participated. Qualitative data were obtained from interviews with 11 nurses from a public hospital and analyzed using the Content Analysis technique. Results: there were no statistically significant differences with the implementation of the model. However, nurses identified increased competencies in evidence-based practice with the recognition of advantages in their professional development, organization, and patient care. Conclusion: the implementation of the model has been shown to have contributed to the development of competencies in evidence-based practice.

Descriptors: Evidence-Based Practice; Professional Competence; Nursing, Supervisory.

RESUMO


Descrições: Prática Clínica Baseada em Evidências; Competência Profissional; Supervisão de Enfermagem.


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Introduction

Evidence-based practice in nursing is considered a process by which nurses support and integrate decision making based on the best available scientific evidence, clinical experience, patient/family preferences, and the resources available in the care setting\(^1\-^2\), and these are its key elements. When implemented in an organizational context, it supports care and can achieve high levels of quality and health gains for patients\(^2\-^3\). The development of professional competencies in nurses involves the articulation of theoretical knowledge, practical skills, and attitudes. Some authors have mentioned the existence of some difficulties (barriers) in the exercise of competencies based on scientific evidence in care practice\(^1\,^4\). Although nurses show favorable attitude, theoretical knowledge and skills for evidence-based practice, they still have difficulties in incorporating it into practice, and this is a reality identified internationally\(^1\,^2\,^4\,^5\).

Based on the concept proposed by the Portuguese Order of Nurses, clinical supervision in Nursing is considered a formal process of monitoring professional practice, which aims to promote autonomy in decision-making, enhancing the safety and quality of care through processes of reflection and analysis of clinical practice\(^6\-^7\). The research produced over the last few years has demonstrated the gains that clinical supervision presents at the level of all stakeholders (supervisors, supervisees, context, and patients)\(^8\-^9\).

Clinical supervision in Nursing constitutes an added value in the translation of knowledge, and should be implemented in health care settings and be considered in the professional development processes of nurses throughout their professional practice\(^10\). Although clinical supervision is already well implemented in countries such as the United Kingdom or Australia, in Portugal and Brazil, it is still incipient in the daily practice of nurses. In Brazil, the teaching of clinical supervision in the Supervised Curricular Internship encounters some difficulties in its practical implementation, mainly, the lack of clarity of the role of the nurse supervisor and difficulties in regulating the clinical practice fields\(^7\).

The SafeCare Model aims to contribute to the promotion of safety and quality of Nursing care. This model was developed from a research based on nurses’ needs and the importance of adapting clinical supervision in Nursing to the care context. Similarly, the model contributes to meeting the needs imposed by quality systems, as formally indicated by organizations such as the World Health Organization, the International Council of Nurses and the Portuguese Order of Nurses. Its advantages include flexibility and applicability in several care contexts, since it focuses on the needs and interests felt by nurses in the specific context. Currently, it is based on four structuring axes: context (referring to the set of elements and circumstances in which care is developed and provided); nursing care (focuses on the interpersonal relationship between the nurse and the patient or between the nurse and a group of patients); professional development (refers to the need for nurses to develop permanent training throughout their professional activity) and supervision (based on the concept defended by the Portuguese Order of Nurses Association mentioned above). This model comprises four stages explained in the methods. The effectiveness of the model’s implementation is greater the better the quality of the relationship that is established between its axes\(^11\).

Given that there is still a limited body of research on the evaluation of the effects of clinical supervision of nurses, particularly in the development of professional skills, plus the fact that evidence-based practice is an asset for the quality of care and that nurses have difficulties in incorporating it into their practice, this research aimed to evaluate the impact of the implementation of the SafeCare Model on the evidence-based practice competencies of nurses.

Methods

This is an action-research study and focuses on quantitative and qualitative data related to the varia-
The mixed method was adopted, characterized by the concomitant triangulation of data (quantitative/qualitative)\(^\text{(12)}\).

The choice of this methodological strategy aimed at a greater integration and complementarity of the data under analysis, allowing for an interpretation (divergence and convergence) and the integration of results that would allow analyzing the influence of the SafeCare Model in the context and development of the nurses’ competencies in evidence-based practice. The complementarity that data triangulation allows is relevant in order to compensate possible weaknesses of the data under analysis\(^\text{(13)}\). The research was conducted at the Psychiatry and Mental Health Service of a hospital center in northern Portugal, in Porto.

In the quantitative phase, the inclusion criteria were the context nurses who participated in all stages of the implementation of the model, having completed the instrument in stages 1 and 4. Thus, the sample included all the nurses (n=13) who worked in the Psychiatry and Mental Health Service of the hospital center and who participated in all stages of the implementation of the model.

The data collection instrument consisted of: 1) the participants’ sociodemographic and professional characterization (age, gender, length of professional practice, legal employment status, academic and professional qualifications, training in clinical supervision) and 2) the Clinical Effectiveness and Evidence-Based Practice Questionnaire-20.

The Clinical Effectiveness and Evidence-Based Practice Questionnaire-20 was translated and validated for the Portuguese population\(^\text{(13)}\). It consists of 20 items and three subscales: Practices, Attitudes, and Knowledge/Skills and Competencies. The first component evaluates Practices and uses a six-item Likert-type scale ranging from one (never) to seven (frequently). The second component evaluates Attitudes, through the proximity positioning adopted for each pair of questions, in a total of three items. The third component evaluates Knowledge/Skills and Competencies, by means of an 11-item Likert-type scale, ranging from one (worst) to seven (best). In its original version, this questionnaire presents a Cronbach’s alpha for the dimensions: Practices (\(\alpha=0.85\)); Attitudes (\(\alpha=0.79\)); Knowledge/Skills and Competencies (\(\alpha=0.91\)) and has an overall internal consistency of \(\alpha=0.87\).

In the qualitative phase, nurses who had participated in the implementation of the model in all stages, either as supervising nurses, supervised nurses or nurse managers, were selected. Eleven nurses participated, a number that already allowed for data repetition (saturation), being four clinical nurse supervisors, four supervised nurses, and three nurse managers of the context.

For the semi-structured interview, a guide was prepared consisting of two parts: 1) sociodemographic and professional characterization of the nurses and 2) a set of questions that aimed to identify the nurses’ perceptions of the changes introduced in the context after the implementation of the SafeCare Model and the level of evidence-based practice competencies in the team.

A pre-test of the guide was conducted with four nurses who participated in the research, with no need for reformulation, in addition to its evaluation by an external expert, who gave a favorable opinion of the guide. The SafeCare Model is based on four stages, which correspond to the research design, and was implemented and evaluated from April 2017 to September 2019.

In stage 1 of the survey, which ran from April to July 2017, participants were given two copies of the Clinical Effectiveness and Evidence-Based Practice Questionnaire-20 for completion in this and the last stage. Each questionnaire contained a random code. In stage 2, needs in clinical supervision were identified by holding meetings with nurses, nurse managers, and researchers. Stage 3 contemplated the implementation of the SafeCare Model. Clinical supervisors were selected and five supervision teams were formed. The meetings, lasting two hours, were held...
from September 2017 to November 2018. Training on clinical supervision was provided to the entire team. Stage 4, which took place from January to March 2019, consisted of evaluating the implementation of the model, with the completion of the same questionnaire applied in stage 1.

The semi-structured interviews with clinical supervising nurses, supervised nurses, and nurse managers (n=11) were conducted from April to September 2019 after consent, in person, in a proper place, according to the availability and time chosen by each of the participants, being recorded and later transcribed. The average duration of the interviews was 30 to 45 minutes.

The statistical treatment of the data collected was performed using the Statistical Package for the Social Sciences, version 24.0, using descriptive and non-parametric statistics due to the sample size (n=13). Median and interquartile range (IQR) values were calculated for the two stages of the model (1 and 4) and for each of the dimensions and total score of the Clinical Effectiveness and Evidence-Based Practice Questionnaire-20 scale. The evidence values were obtained by applying the Wilcoxon test.

For the qualitative part of the data, Content Analysis was performed\(^{(14)}\), using NVivo 12 software, composed of the following phases: a) organization of the analysis; b) coding; c) categorization; d) treatment, inference and interpretation of results. This analysis was carried out by the main author and reviewed by two experienced researchers, co-authors of the article, and carried out separately by each researcher. The analysis categories were built by the researchers in consensus.

The empirical material obtained in the interviews was explored and analyzed, considering the criteria of representativeness, homogeneity, recategorization and aggregation of the elements of the set, and four thematic categories and their respective subcategories were elaborated and presented in the results.

The representation of the participants was made randomly by the letter N, which represents the supervised nurse; by CNS, which represents the clinical nurse supervisor; and by NM, which represents the nurse manager, all followed by numerical order of participation (N1 to N4, CNS1 to CNS4, and NM1 to NM3).

All necessary authorizations were secured, namely from the Ethics Committee of the hospital center (EC 335/2016), in addition to informed consent and voluntary participation of the participants.

**Results**

Thirteen nurses answered the questionnaire in stage 1 and repeated it in stage 4. Most participants were female (n=8; 61.5%); mean age 39.8 years; mean time in professional practice 16.6 years. Two nurses (15.4%) had done only an undergraduate degree in Nursing; eight had a graduate degree in Nursing (61.5%); three nurses (23.1%) had a master’s degree and the vast majority had no training in clinical supervision (n=10; 84.6%).

Given the longitudinal nature of the research, the reduced number of participants was due to the fact that there was turnover of nurses during the research, as well as prolonged absences (certificates and parental leave) and withdrawals. Table 1 shows the values obtained for each dimension and the total score of the Clinical Effectiveness and Evidence-Based Practice Questionnaire-20 in stages 1 and 4 of implementation of the SafeCare Model.

<table>
<thead>
<tr>
<th>Sub-scales</th>
<th>Stage 1 Median (IQR)</th>
<th>Stage 4 Median (IQR)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practices</td>
<td>4.67 (3.83)</td>
<td>4.42 (1.75)</td>
<td>0.894</td>
</tr>
<tr>
<td>Attitudes</td>
<td>5.83 (1.83)</td>
<td>5.83 (1.12)</td>
<td>0.788</td>
</tr>
<tr>
<td>Knowledge</td>
<td>5.00 (1.43)</td>
<td>5.09 (1.91)</td>
<td>0.433</td>
</tr>
<tr>
<td>Total</td>
<td>4.92 (0.83)</td>
<td>4.80 (1.38)</td>
<td>1.000</td>
</tr>
</tbody>
</table>

\(p<0.050; \text{IQR: Interquartile range}\)

When comparing the median scores, there were no statistically significant differences, as the test...
values were greater than 0.05, either for the total scale or for each of the subscales - Practices, Attitudes, and Knowledge/Skills and Competencies. Thus, the sample size is small, which may be related to these results. The median total score of the Clinical Effectiveness and Evidence-Based Practice Questionnaire-20 decreased from stage 1 to stage 4. The same is true for the Practices subscale score. For the Attitudes subscale, the median score did not change between the two stages. For the Knowledge/Skills and Competencies subscale, the median score increased from stage 1 to stage 4. That said, it is important to analyze this data in conjunction with that from the interviews.

From the analysis of the empirical material obtained in the interviews, four thematic categories emerged: 1) Overall evaluation of the experience; 2) Influence of the model on the context; 3) Influence of the model on evidence-based practice skills; 4) Suggestions for continuity.

In the overall assessment of the experience, most participants considered it positive and important for the care context. The following facilitating factors were identified: the support from the clinical nurse supervisor; the individual motivation of some team members; the support from the peer group and the leadership: Show, to the team, that it was important for us this... that things would also be important for the patients, show them that this would help them improve our practice (CNS1). Nobody is going to be motivated by income or career, this has to be the group on the inside, we have to be the ones, with the supervisors or the leadership, to find a way here to get... (CNS4). What I think contributed most to the evolution of the process itself was the management (N3)...It was very positive for the professionals who felt accompanied... (NM1).

As limiting factors, personal factors were identified (demotivation, resistance to change and lack of knowledge about clinical supervision), as explained in the following statements: I've done trainings here for twenty or so people and I've seen people doing trainings where the shift workers showed up. This demotivation is also noticed as a result of the Nursing phase we are going through...it’s just individual motivation (CNS3). I think there are always colleagues who are allergic to change and that it is always difficult to make them change, to make them see things differently... (CNS1)...it was something new for me, the concept of supervision, because I always associated supervision with our hospital supervisors (N4).

At the organizational level, participants highlighted time, workload, lack of human resources, and environment as factors that limited their availability for supervision sessions: The difficulties, I think, are more getting the time, having staff to get things done well, and then the whole environment itself is sometimes not so favorable (N1). The difficulties happened, they occurred, namely with regard to human resources, with occasional unscheduled absences (NM2).

Regarding the influence of the model in the context, nurses identified influence on themselves, on patients, and on the service. For the health professionals, greater accountability and professional development were highlighted, as well as personal development: For example, with me, I became more interested in wanting to know, I enrolled in a master's degree, now I'm thinking about a doctorate and that brings new knowledge to the service, right? Because what we learn, we bring back to the service (N3). I managed to focus more on what I really want, I managed to stay or become a little more disciplined and cultivated a little more perseverance (N4). Some also described that they felt the team members were more motivated, with changes at the team relationship level, especially communication, cohesion and conflict resolution: There was more change, we noticed that people were a little more motivated (N1). We communicate more and see more the other's opinion (CNS1)...helped in the existing conflicts (N4).

For the patient, the improvement in safety and quality of care was highlighted: By being aware of what exists in the evidence, of what exists in terms of more current knowledge, more appropriate for each intervention, we will inevitably provide better care, both for the patient and for the family (CNS2).

In the service, the interviewees highlighted the restructuring and improvement in the organization: As a result of the supervision we did, there were obvious changes in the way of working. That part of separating areas was useful and we took the first steps here in the supervision context (CNS4). Also for the service itself, for guidance, for monitoring, for improving standards and procedures, and for an awareness of care (NM1).

Regarding the influence of the model in the development of evidence-based practice competencies,
the interviewed nurses revealed that they recognized the importance of its incorporation in clinical practice, as exemplified in the following statement: *This [of evidence-based practice] I think caught my attention a little bit more, that is, the importance of this type of research, of knowing, of the person always trying to know more and that this is important for the person to be able to provide better care. I think that the team became richer in this aspect* (N1).

On the other hand, it allowed them to become aware of the existing barriers in the context and of strategies to overcome them: *The fact that we have had training not only in the area of evidence-based practice, but also in others, enriches us immensely and then helps us to acquire strategies in various places to overcome barriers* (N2).

Another aspect highlighted was that nurses verbalized that it was important to reflect on the practice in the clinical supervision process. This is because, for the implementation of evidence-based practice, it is important to question the practice so as not to remain in the day-to-day routine and to sustain interventions based on the search for evidence. They reinforced the fact that they had a space and a “time” to stop and reflect on the care needs and demands, which also allowed the awakening of a greater curiosity to know more to improve care delivery. They also recognized that the implementation of best evidence in practice should be something sustained over time and that it requires the adoption of strategies appropriate to the context and characteristics of the team: *There were advantages and it was positive because it led people to reflect* (NM2). *I think that it also awakened a lot of “wanting to know more” and searching in professionals* (N3). *One thing I would like to do in the future ...is to keep these meetings and then see what the evidence says about this theme* (CNS4).

The suggestions for the continuity of clinical supervision activities were grouped into structural, i.e. of the model itself, and organizational, i.e. of the organization and service. Regarding the structural ones, the participants mentioned the need for continuity of the supervision sessions: *We can continue ... to have a place and time where we can all get together and really stop, think about what’s wrong, what’s right, and then continue. Not just having those mandatory meetings* (N4). In addition to continuity, they mentioned that the duration of implementation should be longer. In terms of organizational conditions for continuity, they suggested that time is of the essence: *To improve would be time management... (CNS4). ...more time to work in groups* (CNS2).

Regarding time, they suggested that it is important for the service to have a culture of training and supervision: *People I think have reached a point where they’ve really bought into it, I think it would be good if we continued to have this “culture”* (of clinical supervision)... (N4).

The participants also mentioned that it would be important to have the support of the manager, but also of a person with specialized training in clinical supervision in Nursing, as they mentioned that it would be useful to continue to give the impetus that the team needs: *...We inevitably need to have someone to give us that push, although we have already acquired strategies and curiosity has increased* (N2). *...I also think that the head nurse who should continue to motivate us...* (N3). *...I think that, at this moment, there are elements within the service itself and in the different places, that they themselves could with some supervision and with some external accompaniment, manage to continue* (NM2).

**Discussion**

The model was based on the nurses’ needs and the importance of adapting clinical supervision to the care setting. Thus, the sample, the type of sampling, and the fact that the implementation was carried out in a specific care setting were considered limitations. Future research should be developed on this theme in other contexts of intervention and with a larger sample of participants.

This study provides contributions to clinical practice, research and education in Nursing, since there are few studies that relate the implementation of a clinical supervision model as a formal support for the development of professional competencies of evidence-based practice. Overall, nurses verbalized a positive impact of the implementation of the SafeCare Model for the development of these professional skills.
The barriers to implementation of evidence-based practice described in the literature are grouped into four levels: Organizational (insufficient support from management; lack of organizational culture that values these practices; lack of material resources); Leadership and Management (lack of staff involvement and support); Professional (lack of knowledge and skills; negative attitudes; lack of time); Evidence (high amount of information available; high quality research difficult to access)\(^{(15)}\). On the other hand, there are facilitating factors for the adoption and implementation of evidence-based practice, namely, knowledge and skills; a favorable attitude towards evidence-based practice and its implementation; a supportive culture that provides resources and tools; and the existence of supervisors or clinical leaders\(^{(1-2,15)}\).

After clinical supervision, nurses report recognizing the importance of evidence-based practice and its incorporation into practice, as well as the existing barriers, valuing the formal support induced by supervision and the reflection on practice, promoting facilitating factors described in the literature. In a perspective of continuous improvement, the implementation of the SafeCare Model allows the context actors to perceive the existing barriers in the organization where they work. On the other hand, this is a self-report instrument, so after the implementation of the SafeCare Model, nurses have a different perception of the development of this competence and of the implementation of evidence-based practice in the context, namely, of the existing barriers\(^{(5)}\), something described in the literature and verbalized in the interviews.

Another relevant finding is the importance attributed to supervision sessions and reflection on practice. This aspect is crucial considering that reflective questioning is called stage zero of the evidence-based practice process\(^{(4,16)}\). Without the “questioning” of practice, it is not possible to identify gaps to be overcome. There are other strategies that are also promoters of critical thinking and team questioning, i.e. team support and motivation/challenge\(^{(10,17)}\).

Education and continuing education seem to be a facilitating factor in the development of evidence-based practice competence in nurses and the implementation of evidence-based practice within the hospital structure, and the implementation of the model valued this formative component in the supervision sessions\(^{(2,4,18)}\). Collaboration between professors, researchers and care nurses is also verbalized as an important support, valued by nurses in the care setting and considered a facilitating factor for the incorporation of evidence-based practice and the professional development of this competence\(^{(2-4,15)}\).

The barriers mentioned by the team and related to the strategic dimension consist of lack of resources, limitations with the time available for the supervision sessions, team turnover and work overload and are in line with the existing literature\(^{(17)}\). Thus, prior to the implementation of a clinical supervision model, the following aspects should be considered.

Organizational culture is also mentioned as a barrier to the implementation of interventions that promote the translation of knowledge into practice. In fact, organizational culture can be a facilitator or a barrier to change and innovation. Therefore, it is crucial to promote an organizational climate that fosters readiness for change, both of professionals and of the environment and context\(^{(15,17)}\).

The training of clinical supervisors, who are considered to be experienced nurses with evidence-based practice skills and who implement strategies aimed at overcoming barriers and changing behaviors at the organizational and professional levels\(^{(2)}\), allowed the context to value suggestions for continuity, the maintenance of clinical supervision sessions, collaboration between staff, teachers and researchers, as well as the holding of meetings to promote the sharing of new evidence-based knowledge. This research constitutes the first step in investigating the relationship between clinical supervision in Nursing and the development of professional competencies of evidence-based practice and its implementation in the care setting, as it is a relevant study for the practice of Nursing care.
Conclusion

The research allowed assessing the impact of the implementation of the SafeCare Model on the evidence-based practice competencies of nurses. Although no statistically significant differences were identified in the results obtained by the application of the Clinical Effectiveness and Evidence-Based Practice Questionnaire, due to the low number of participants, it cannot be disregarded that the SafeCare Model, adapted to the needs of the context, its stakeholders, and the characteristics of the organization, was perceived by nurses as a facilitator of clinical supervision and provided support for the development of evidence-based practice competencies by nurses.

Collaborations

Teixeira AIC contributed to the project design, data analysis and interpretation, and writing of the article. Teixeira LOLSM contributed to the writing of the article. Pereira RPG and Püchel VAA contributed to the relevant critical review of the intellectual content. Barroso C and Carvalho ALRF contributed to the relevant critical review of the intellectual content and approval of the final version to be published.

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