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WORLDVIEWS ON EVIDENCE-BASED NURSING

ORIGINAL ARTICLE

Effectiveness of the best practice spotlight organizations program to reduce the prevalence of pressure injuries in acute care settings for hospitalized patients in Spain: A quasi-experimental study

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Abstract

Background: Pressure injuries are a major public health problem because of their impact on morbidity and mortality, quality of life, and increased healthcare costs. The Centros Comprometidos con la Excelencia en Cuidados/Best Practice Spotlight Organization (CCEC/BPSO®) program provides guidelines that can improve these outcomes.

Aims: This study aimed to assess the effectiveness of the CCEC/BPSO® program in improving the care of patients at risk of pressure injury (PI) at an acute care hospital in Spain.

Methods: A quasi-experimental regression discontinuity design in three periods was used: (1) baseline (2014), (2) implementation (2015–2017), and (3) sustainability (2018–2019). The study population was comprised of 6377 patients discharged from 22 units of an acute care hospital. The performance of the PI risk assessment and reassessment, the application of special pressure management surfaces, and the presence of PIs were all monitored.

Results: Forty-four percent of patients ($n = 2086$) met the inclusion criteria. After implementing the program, the number of patients assessed (53.9%–79.5%), reassessed (4.9%–37.5%), the application of preventive measures (19.6%–79.7%), and the number of people identified with a PI in implementation (1.47%–8.44%) and sustainability (1.47%–8.8%) all increased.

Linking Evidence to Action: The implementation of the CCEC/BPSO® program achieved improved patient safety. Risk assessment monitoring, risk reassessment, and special pressure management surfaces were practices that increased during the study period and were incorporated by professionals to prevent PIs. The training of professionals was instrumental to this process. Incorporating these programs is a strategic line to improve clinical safety and the quality of care. The implementation of the

program has been effective in terms of improving the identification of patients at risk and the application of surfaces.

INTRODUCTION

Over the past decade, great efforts have been made to incorporate evidence-based practice (EBP) into health care (Curtis et al., 2017). However, it is estimated that only 60%–70% of care is based on EBP and 20%–25% of this is unnecessary or potentially harmful (Jordan et al., 2018).

The need to incorporate EBP into healthcare organizations has led to the development of theoretical models to guide the way in providing care based on the best available scientific evidence. Clinical practice guidelines (CPGs) are considered by healthcare organizations and healthcare professionals to be effective tools for incorporating EBP (Murad, 2017). CPGs have evolved into reliable and widely used instruments due to their efficacy, safety, cost-effectiveness, and person-centered approach (Grol et al., 2013). CPGs involve developing a methodology that addresses the context, population characteristics, barriers, and facilitators that determine their use and the resources available (Geerligs et al., 2018), although their publication and dissemination do not necessarily lead to translation into practice or systematic use (Cahill et al., 2020).

The Centros Comprometidos con la Excelencia en Cuidados/Best Practice Spotlight Organization (CCEC/BPSO®) program has been developing and supporting healthcare and academic institutions in the implementation of CPGs since 2003 (Grinspun & Bajnok, 2018). Spain joined this program in 2010, and since 2012, every 3 years, public and competitive calls are held for more healthcare centers to join (González-María et al., 2020). The methodology used by this program is based on the implementation toolkit designed by the Registered Nurses' Association of Ontario (RNAO®, 2012). Healthcare organizations that implement the RNAO® implementation toolkit demonstrate positive impacts on care processes and patient health (González-María et al., 2020; Quiñoz-Gallardo, Barrientos-Trigo, et al., 2021; Quiñoz-Gallardo, Gonzalo-Jiménez, et al., 2021). The Hospital Universitario Virgen de las Nieves (HUVN) has been working on this program since 2015 with the implementation of the RNAO® CPG "Risk assessment and prevention of pressure ulcers" (Quiñoz-Gallardo, Barrientos-Trigo, et al., 2021). Previously, an increase in pressure injuries produced during hospitalization was detected (80%). This rate was higher than the national average in Spain (65%; Pancorbo-Hidalgo et al., 2014). To reduce the rate of pressure injuries, HUVN requested its affiliation with the BPSO® program to implement this guide.

Pressure ulcers or pressure injuries (PI) continue to be a public health problem due to their morbidity and mortality and impact on people's quality of life (European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel, & Pan Pacific Pressure Injury Alliance [NPUAP, EPUAP, & PPPIA], 2019; Pancorbo-Hidalgo et al., 2019). PIs are an adverse effect of health care and an indicator of quality of care (Sinn et al., 2016). Their occurrence depends on the characteristics of the patient (e.g., mobility, age, comorbidities, nutritional level) and of the hospital (e.g., types of medical care and nursing staff), leading to increased hospital stays (up to 4.3 days more), and increased home care costs (Kim et al., 2019; Porcel-Gálvez et al., 2022).

Aims

The purpose of this study was to assess the effectiveness of the CCEC/BPSO® good care practice implementation program in reducing PIs produced at an acute care hospital in Spain.

Hypotheses

Three hypotheses were evaluated for this study:

1. H1: The CCEC/BPSO® program does not contribute to identifying a greater number of patients at risk of developing PIs during the hospitalization process
2. H2: The CCEC/BPSO® program, despite identifying these patients, does not enable at-risk patients to receive preventive measures appropriate to their level of risk
3. H3: The application of the CCEC/BPSO® program, despite identifying these patients and providing them with preventive measures, fails to reduce the occurrence of PIs

METHODS

Design

A quasi-experimental regression discontinuity study design in 3 periods was used: Year 2014 baseline (T0), 2015–2017 implementation (T1), and 2018–2019 sustainability (T2).

Setting and sample

The study was conducted between 2014 and 2019 at a primary hospital, HUVN (>500 beds and large metropolitan areas), in the National Health System (southern Spain). Twenty acute hospitalization units and two intensive care units (ICU) participated, in which the identification of patients at risk of developing a PI (risk assessment and reassessment) and the application of preventive measures such as pressure management surfaces (SPMS) were carried out, depending on the risk identified.

Inclusion criteria

Patients were included if they were aged 75 years or over and had a Barthel less ≤60 and presence of PI risk (using the Braden scale or the Comhon index) in the nursing assessment upon admission. Pediatric and maternity, day hospital, and resuscitation patients were excluded, and 2806 patients were adjusted from an initial population of 6377.

To measure the baseline (T0) and implementation (T1) periods, patients discharged in the last 5 days of the month were assessed, and for the measurement during the sustainability period (T2), the last 5 days of each quarter were assessed as established by the CCEC/BPSO® program evaluation protocol (Grinspun & Bajnok, 2018; Figure 1).

Measures

The variables were grouped according to the recommendations of the guideline "Risk assessment and prevention of pressure ulcers" (Registered Nurses' Association of Ontario, 2011) into two categories:

1. Process of care:

- PI risk assessment: Number of patients with PI risk assessments in the first 24 hours of admission.
- PI risk reassessment: Number of patients with PI risk reassessments upon discharge.
- Special Pressure Management Surfaces adjusted to risk level (SPMS): Number of patients who use SPMS depending on the risk.

2. Health outcomes:

- Previous PI: Number of patients with a PI before admission.
- Nosocomial PI: Number of patients who develop a PI during their stay at hospital.
- Previous PI and Nosocomial PI: Number of patients with a PI before admission and who develop a new PI during their stay at hospital.

To include patients at risk, the Braden scale for inpatients was used to assess mobility, humidity, sensory perception, activity, nutrition, and friction (Braden & Bergstrom, 1994). It is the most used worldwide thanks to its ease of use and interpretation of the score compared to other scales (Huang et al., 2021). The Comhon index was used on ICU patients, measuring level of consciousness, mobility, hemodynamics, oxygenation, and nutrition (Leal-Felipe et al., 2018). It has a strong correlation with the Braden scale and should be used in conjunction with diagnostic impression to provide optimal results (Theeranut et al., 2021).

Intervention/recruitment/training

The methodology used by the CCEC/BPSO® program is based on the Knowledge for Action model (Registered Nurses' Association of Ontario, 2012). In this study, six phases of the action implementation model were applied: (1) identification of the problem; (2) adaptation to the local context; (3) evaluation of facilitators and barriers; (4) adaptation and implementation of the interventions; (5) monitoring and evaluation of results; and (6) sustainability.

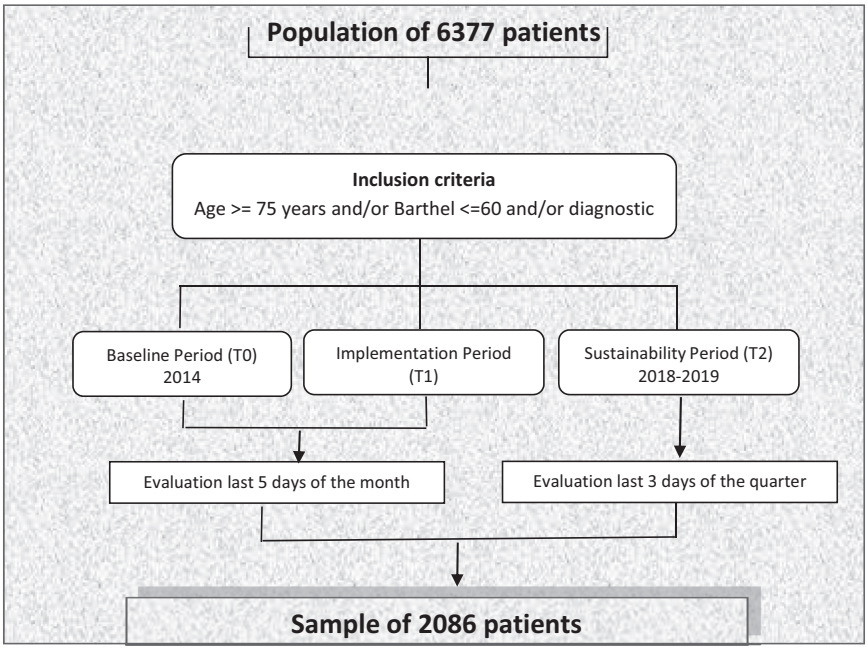

FIGURE 1 Sample selection, inclusion, and evaluation criteria.

In period T0, a coordinating team consisting of seven nurses was formed and were responsible for implementation, recommendations, and study units selections. Four of the seven nurses had a clinical profile and three had management profile. During periods T1 and T2, professionals were trained, and data were collected and dumped into the CarEvID® online platform of the CCEC/BPSO® program.

During period T0, the recommendations were operationalized through the study variables. Twenty-two units (20 acute and 2 ICU) were included, sequentially, and directly proportional to the prevalence of PIs.

During period T1-T2, a total of 231 nursing professionals were trained, representing 10.4% of the total staff at the center, performing a total of 41 training activities in T1 and 28 in T2. Figure 2 describes the expansion process, the number of professionals recruited, and the training activity performed throughout the period analyzed.

To reduce the risk of bias, different measures were addressed. Homogeneous training was implemented in all units. The content was agreed among the trainers according to the recommendations of the RNAO guide. A section was set up on the hospital website with training and training pills. In addition, the same availability of material resources for prevention was guaranteed in all units.

Data collection and recording

The data were obtained from the patients' Digital Health Record nursing records after discharge. The data were collected for 6 years (2014–2019) and aggregated by the periods described (T0, T1, & T2). The data were collected on the online platform CarEvID®, a common platform for all CCEC/BPSO®.

Data analysis

A descriptive analysis was performed for each of the variables, expressing the results by absolute and relative frequencies. Response rates were compared between the baseline and implementation periods (T0-T1), between the baseline and sustainability periods (T0-T2) and between the implementation and sustainability periods (T1 and T2). The statistic used was the chi-square test at a significance level of 0.05. The data have been analyzed with IBM SPSS Statistics 19 Software.

Ethical considerations

This institution, after being selected as a BPSO/CCEC® program member center, signed a confidentiality agreement committing itself to follow the Good Clinical Practice standards, respecting current national and international legislation. In accordance with European Union Regulation 2016/679, of the European Parliament and Council, dated 27 April 2016, regarding the protection of individuals with respect to the processing of personal data; the seventeenth Additional Provision (Processing of health data) of Organic Law 3/18, of 5 December, on the Protection of Personal Data and Guarantee of Digital Rights, was complied with. The databases used in the evaluation are encrypted and do not contain any personal

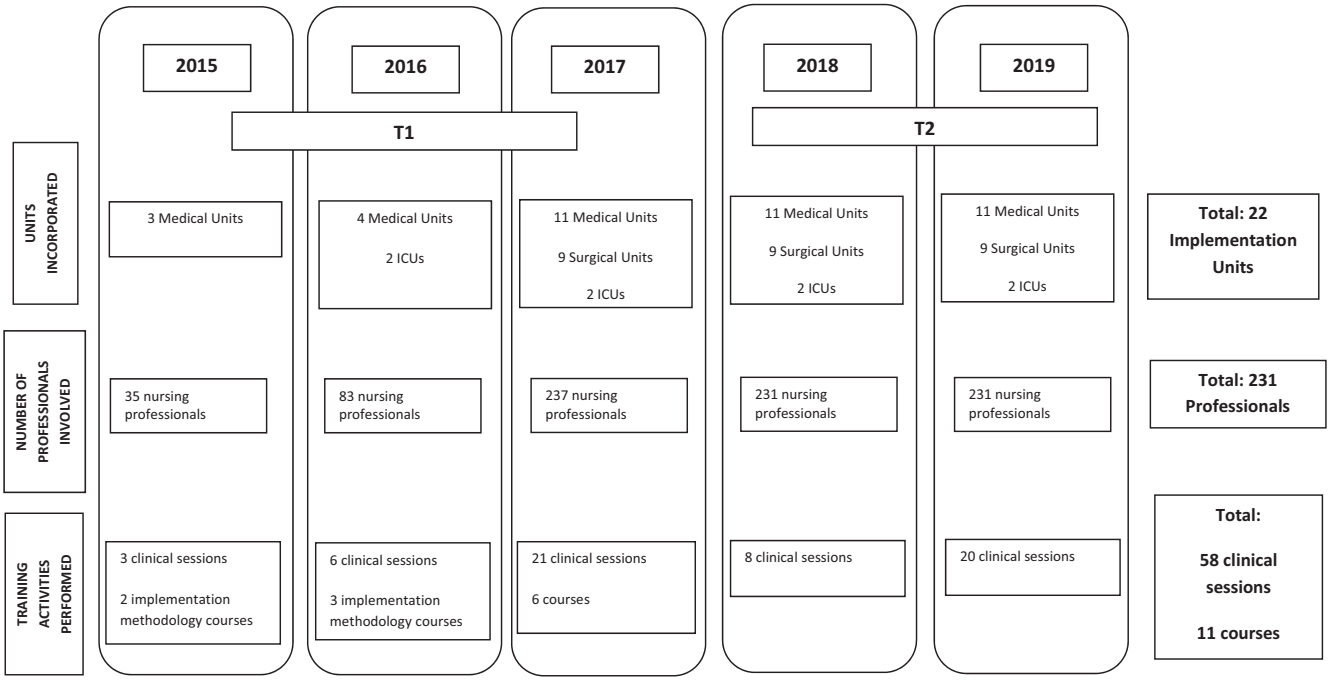

FIGURE 2 Flow chart of the recruitment and training process.

information, having previously requested favorable reports of conformity from both the Management of the center and the Clinical Research Ethics Committee (CEIC [Comité Ético de Investigación Clínica]) in the province (Code: T-IGLP-2020).

RESULTS

The total number of patients evaluated was 6377, with 389 patients (6.1%) in T0, 3816 (59.84%) in T1, and 2172 (34.05%) in T2. The mean age was 63.6 years, of which 56.7% were men and 43.29% were women. Of this sample, 2806 patients (44%) met the inclusion criteria, with the following distribution by periods: T0 = 204 (52.4%); T1 = 1837 (48.1%); and T2 = 765 (35.2%). The demographic, process of care, and health outcome data are shown in Tables 1 and 2.

Regarding the units that took part in the research, 57.90% were medical, 37.89% surgical, and 4.20% ICUs. With regard to the care process, the number of patients who underwent a risk reassessment and to whom SPMS were applied increased significantly ($p = .002$ and $p = .0001$), ($p = .0001$ and $p = .001$) between the baseline period (T0) and the other periods (T1 & T2; Table 2). The differences in risk assessment (RA) between the first and last periods were close to significance ($p = .026$).

Regarding the health outcomes, in view of the results obtained in Table 2, we did not observe any differences in PI, neither in previous nor in nosocomial, and the number of patients who accumulated both was very small.

DISCUSSION

This study provides evidence for the translation of knowledge into clinical practice by evaluating the effectiveness of the implementation of the CCEC/BPSO® program in reducing PIs at an acute care hospital in Spain. The results add to the broad worldwide evidence supporting the need to work to implement guidelines of this type to improve care practice. Suggest that risk assessment monitoring, its reassessment and the use of special pressure management surfaces, over a period of 6 years, have been common practices incorporated by nurses to prevent PIs in patients. Therefore, applying the CCEC/BPSO® program, which uses a structured methodology aligned with evidence-based practice, achieves progressive changes in practice in a specific clinical context.

The percentage of patients who met the inclusion criteria and were identified as at risk (44%) was lower than that found by Chaboyer et al. (2017) at four acute care hospitals (56.9%), but higher than that described by Lorente-Granados et al. (2020) at another

TABLE 1 Demographic results during study periods

	2014	2015–2017	2018–2019
	Baseline (T0)	Implementation (T1)	Sustainability (T2)
Period	*n* (%)	*n* (%)	*n* (%)
Sample ($n = 2806$)	204 (52.4)	1837 (48.1)	765 (35.2)
Demographics			
Mean age (years)	73.42	71.80	71.66
Gender-Male	108 (52.94)	986 (53.67)	412 (53.92)

TABLE 2 Process of care and health outcome results: comparison between periods T0 (baseline), T1 (implementation), and T2 (sustainability)

Process of care				T0-T1		T0-T2		T1-T2	
	T0	T1	T2	X^2	*p*	X^2	*p*	X^2	*p*
RA	110 (53.9)	1161 (63.2)	608 (79.5)	0.74	*.39*	4.9	*.026*	1.86	*.17*
RRA	10 (4.9)	370 (20.1)	287 (37.5)	9.24	*.002**	25.06	*<.0001**	5.26	*.02*
SPMS	29 (19.6)	608 (55.4)	546 (79.7)	17.09	*<.0001**	36.34	*<.001**	4.37	*.04*
Health outcomes									
PPI	2 (0.98)	89 (4.84)	36 (4.7)	2.56	*.11*	2.44	*.12*	0002	*.96*
NPI	1 (0.49)	57 (3.1)	23 (3.0)	1.89	*.17*	1.80	*.18*	0001	*.97*
PPI + NPI	0	9 (0.5)	1 (1.1)	0.5	*.48*	1.1	*.29*	0.23	*.63*
Total PI	1.47	8.44	8.8						

Abbreviations: NPI, nosocomial pressure injury; PPI, previous pressure injury; RA, rRisk assessment on admission; RRA, risk reassessment on discharge; SPMS, special pressure management surface; T0, baseline; T1, implementation; T2, sustainability.

*Tests that remained significant ($p < .05$) after the Bonferroni sequential adjustment (Rice, 1989).

4 hospitals (33.6%) of patients at risk of a PI. However, Chaboyer et al. (2017) used broader criteria (>18 years of age, expected hospital stay >48 h, and presence of reduced mobility) and Lorente-Granados et al. (2020) included the pediatric population in their study sample.

The homogeneity of the results obtained in the demographic variables, both for age and gender, with an almost negligible range, is noteworthy. These variables may help to determine the risk of suffering from a PI. A comparison of the mean age in the study population showed an increase of 8.7 years and a higher percentage of males (53.67%). These results are consistent with Kayser et al. (2019) who found that for every additional 10 years of age, the risk of developing a PI increased by almost 20%, and that men were 40% more likely to develop a PI.

Process of care

A risk assessment on admission, its reassessment, and the use of SPMS have been increasing over the years analyzed, reaching significant differences compared to the baseline period in most cases. By comparing the results with those obtained by Scovil et al. (2019), who implemented a program of preventive measures over 5 years, a greater increase in risk assessment was observed (48 points) than that obtained in our study (25 points), which may be due to a lack of training of the professionals in our units incorporated during the last period of the process (López et al., 2017).

Regular reassessment of PI risk is an internationally endorsed recommendation, although the optimal frequency of this reassessment has not been established in the literature (NPUAP, EPUAP & PPPIA, 2019). Studies such as that of Lorente-Granados et al. (2020) provided percentages of compliance with risk reassessment, whereas others integrate them into risk assessment (Scovil et al., 2019; Smith et al., 2018), with no possibility to compare them. In this study, we started with very low reassessment percentages, which went from 4.9% to 37.5%, approaching the one reached by Lorente-Granados et al. (2020), 42.1%. Therefore, we agree on the need to perform risk reassessments that guarantee a follow-up of the vulnerability of these patients and increase the percentages, as pointed out by Scovil et al. (2019) and Smith et al. (2018), by training professionals in specific aspects of comprehensive risk assessment, and in identifying key factors in changes in patient health status using multimodal intervention strategies (Porter-Armstrong et al., 2018).

The most important intrinsic risk factor when applying preventive measures is immobility, with postural changes, early mobilization, and the use of pressure-reducing support surfaces in at-risk areas being the measures to be applied (NPUAP, EPUAP & PPPIA, 2019; Registered Nurses' Association of Ontario, 2011). This research analyzed a specific measure, namely the frequency of SPMS application in at-risk patients, with significant improvements obtained during the study period (19.6% - 79.7%). These figures are higher than those of other studies that reach maximum figures of 68% (Chaboyer et al., 2017; Latimer et al., 2016; Lorente-Granados et al., 2020; Scovil et al., 2019).

Finally, it is worth noting that there were no significant differences in any of the variables between the implementation period (T1) and the sustainability period (T2), which may indicate that improvements are already achieved from the first period.

Health outcomes

Regarding the presence of PIs, although no statistical differences were detected, this study found an increase in this type of injury from the baseline period (T0) to the implementation (T1) and sustainability (T2) periods. This can be explained by the awareness of professionals from the implementation period of the injury detection recommendations, rather than by the actual increase in injuries. The increase in staff training has led to an increase in their awareness of recording, which different studies identified as one of the main barriers (Crunden et al., 2022).

In addition to intervening in staff training, Padula et al. (2016) propose intervening in hospital leadership by encouraging an organizational culture change through participation in quality improvement programs that are committed to working with EBP. Even so, it may be difficult to measure the direct impact of staff training on clinical outcomes for patients, as concluded in the systematic review by Wu et al. (2018). Sufficient time may not yet have passed for the incorporation of these preventive recommendations to achieve an objective reduction in these injuries, with continued monitoring over a long period of time necessary for them to take hold (Fleiszer et al., 2016).

In the wider global clinical community, this research shows that working with evidence implementation programs in nursing care, such as the CCEC/BPSO® program, ensures that nursing professionals are up to date in applying quality care, improving the safety of patients.

Limitations

The main study limitation is the retrospective design. Collecting data from clinical records is dependent on their accuracy and may not fully reflect the reality of care practice, leading to an underestimation of some variables (Torra-Bou et al., 2016). This is the case with the SPMS variable, which had to be extracted from the nursing records.

It is possible that some other preventive interventions like postural changes or dressings which could affect the effectiveness of this program were not evaluated, as it has been shown that multiple intervention programs are more effective than measures applied in isolation to prevent PIs (Gaspar et al., 2019).

Implications for future research

This study adds to what has been contributed by other studies that investigate the impact of evidence implementation programs in the

field of nursing care, for the formulation of clinical safety and care quality policies in healthcare organizations (Gaspar et al., 2019; Ruzafa-Martinez et al., 2021). The topic requires further research on how sustainable these programs are within organizations. For future research, it will be necessary to analyze how the practice context influences the degree of implementation of recommendations on PI prevention, organizational characteristics, or the lack of skills in EBP (Moya-Suárez et al., 2018; Nelson-Brantley & Chipps, 2021). The structured clinical education of nurses in EBP (Välimäki et al., 2018) or the creation of specific spaces that favor it, with limited resources and without overburdening nurses, is important (Renolen et al., 2020).

Linking evidence to action

- The implementation of the CCEC/BPSO® program at an acute care hospital contributed to increased identification and follow-up of patients at risk of PIs, and increased implementation of preventive measures to avoid new PIs.
- The implementation of the CCEC/BPSO® program is an innovative strategy within healthcare organizations. It contributes to improving clinical practice environments through the commitment and training of nursing professionals.
- The training of professionals must be a constant throughout the process.
- Improvements achieved in the implementation phase are maintained in the sustainability phase. However, long-term studies are needed to assess the sustainability of these improvements.

CONCLUSIONS

This study adds to the collection of intervention studies that address the improvement and maintenance of EBP programs in nursing, and in health services in general. In response to hypotheses H1 and H2 stated in the objectives, the CCEC/BPSO® program has been effective in the settings implemented, improving the identification of patients at risk of PIs, and the implementation of preventive measures. As a conclusion to hypothesis H3, there has been no decrease in PIs during the study years and the number of injuries has remained the same. Long-term monitoring of this type of program is necessary to ensure that improvements in the care process have an impact on patients' health outcomes.

The implementation methodology used has been successful in incorporating EBP into nursing. Organizations willing to support this type of program will be able to improve the skill level of their professionals, develop friendlier working environments, and encourage professional commitment to safe and quality care.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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REFERENCES

Braden, B., & Bergstrom, N. (1994). Predictive validity of Braden scale for pressure sore risk in a nursing home population. *Research in Nursing & Health's*, *17*(6), 459–470. https://doi.org/10.1002/nur.4770170609

Cahill, L. S., Carey, L. M., Lannin, N. A., Turville, M., Neilson, C. L., Lynch, E. A., McKinstry, C. E., Han, J. X., & O'Connor, D. (2020). Implementation interventions to promote the uptake of evidence-based practices in stroke rehabilitation. *The Cochrane Database of Systematic Reviews*, *10*, CD012575. https://doi.org/10.1002/14651858.CD012575.pub2

Chaboyer, W., Bucknall, T., Gillespie, B., Thalib, L., McInnes, E., Considine, J., Murray, E., Duffy, P., Tuck, M., & Harbeck, E. (2017). Adherence to evidence-based pressure injury prevention guidelines in routine clinical practice: A longitudinal study. *International Wound Journal*, *14*(6), 1290–1298. https://doi.org/10.1111/iwj.12798

Crunden, E. A., Schoonhoven, L., Coleman, S. B., & Worsley, P. R. (2022). Reporting of pressure ulcers and medical device related pressure ulcers in policy and practice: A narrative literature review. *Journal of Tissue Viability*, *31*(1), 119–129. https://doi.org/10.1016/j.jtv.2021.10.010

Curtis, K., Fry, M., Shaban, R. Z., & Considine, J. (2017). Translating research findings to clinical nursing practice. *Journal of Clinical Nursing*, *26*(5–6), 862–872. https://doi.org/10.1111/jocn.13586

European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel, & Pan Pacific Pressure Injury Alliance. (2019). Prevention and treatment of pressure ulcers/injuries: Quick reference guide. E. Haesler (ed.). https://internationalguideline.com/static/pdfs/Quick_Reference_Guide-10Mar2019.pdf

Fleiszer, A. R., Semenic, S. E., Ritchie, J. A., Richer, M. C., & Denis, J. L. (2016). A unit-level perspective on the long-term sustainability of a nursing best practice guidelines program: An embedded multiple case study. *International Journal of Nursing Studies*, *53*, 204–218. https://doi.org/10.1016/j.ijnurstu.2015.09.004

Gaspar, S., Peralta, M., Marques, A., Budri, A., & Gaspar de Matos, M. (2019). Effectiveness on hospital-acquired pressure ulcers prevention: A systematic review. *International Wound Journal*, *16*(5), 1087–1102. https://doi.org/10.1111/iwj.13147

Geerligs, L., Rankin, N. M., Shepherd, H. L., & Butow, P. (2018). Hospital-based interventions: A systematic review of staff-reported barriers and facilitators to implementation processes. *Implementation Science*, *13*(1), 36. https://doi.org/10.1186/s13012-018-0726-9

González-María, E., Moreno-Casbas, M. T., Albornos-Muñoz, L., Grinspun, D., & Grupo de Trabajo del Programa de implantación de buenas prácticas en Centros Comprometidos con la Excelencia en

Cuidados®. (2020). Implantación de guías de buenas prácticas en España a través del programa de centros comprometidos con la excelencia en cuidados®. *Enfermería Clínica*, *30*(3), 136–144. https://doi.org/10.1016/j.enfcli.2019.09.018

Grinspun, D., & Bajnok, I. (2018). *Transforming nursing through knowledge. Best practices for guideline development, implementation science, and evaluation*. Sigma Theta Tau International.

Grol, R., Wensing, M., Eccles, M., & Davis, D. (2013). *Improving patient care: The implementation of change in clinical practice* (2nd ed., pp. 392). Blackwell Science.

Huang, C., Ma, Y., Wang, C., Jiang, M., Yuet Foon, L., Lv, L., & Han, L. (2021). Predictive validity of the Braden scale for pressure injury risk assessment in adults: A systematic review and meta-analysis. *Nursing Open*, *8*(5), 2194–2207. https://doi.org/10.1002/nop2.792

Jordan, Z., Lockwood, C., Munn, Z., & Aromataris, E. (2018). Redeveloping the JBI model of evidence based healthcare. *International Journal of Evidence-Based Healthcare*, *16*(4), 227–241. https://doi.org/10.1097/XEB.0000000000000139

Kayser, S. A., VanGilder, C. A., & Lachenbruch, C. (2019). Predictors of superficial and severe hospital-acquired pressure injuries: A cross-sectional study using the international pressure ulcer prevalence™ survey. *International Journal of Nursing Studies*, *89*, 46–52. https://doi.org/10.1016/j.ijnurstu.2018.09.003

Kim, J., Lee, J. Y., & Lee, E. (2019). Risk factors for newly acquired pressure ulcer and the impact of nurse staffing on pressure ulcer incidence. *Journal of Nursing Management*, *00*, 1–9. https://doi.org/10.1111/jonm.12928

Latimer, S., Chaboyer, W., & Gillespie, B. (2016). Pressure injury prevention strategies in acute medical inpatients: An observational study. *Contemporary Nurse*, *52*(2–3), 326–340. https://doi.org/10.1080/10376178.2016.1190657

Leal-Felipe, M. L. Á., Arroyo-López, M. D. C., Robayna-Delgado, M. D. C., Gómez-Espejo, A., Perera-Díaz, P., Chinea-Rodríguez, C. D., García-Correa, N., & Jiménez-Sosa, A. (2018). Predictive ability of the EVARUCI scale and COMHON index for pressure injury risk in critically ill patients: A diagnostic accuracy study. *Australian Critical Care*, *31*(6), 355–361. https://doi.org/10.1016/j.aucc.2017.11.003

López, M., Jiménez, J. M., Peña, I., Cao, M. J., Simarro, M., & Castro, M. J. (2017). Ongoing nursing training influence on the completion of electronic pressure ulcer records. *Nurse Education Today*, *52*, 22–27. https://doi.org/10.1016/j.nedt.2017.02.006

Lorente-Granados, M. G., Quiñoz-Gallardo, M. D., Teixiné-Martín, A., Arza-Alonso, N., Suarez, M. D., & Arias-Arias, Á. J. (2020). Implementation of the best practice guideline for pressure ulcer prevention: Development, results and sustainability. *Enfermería Clínica*, *30*(3), 198–211. https://doi.org/10.1016/j.enfcli.2020.04.001

Moya-Suárez, A. B., Canca-Sánchez, J. C., Enríquez de Luna-Rodríguez, M., Aranda-Gallardo, M., & Morales-Asencio, J. M. (2018). Factors associated with variability in the prevention of pressure ulcers. *Journal of Tissue Viability*, *27*(4), 211–216. https://doi.org/10.1016/j.jtv.2018.10.006

Murad, M. H. (2017). Clinical practice guidelines: A primer on development and dissemination. *Mayo Clinic Proceedings*, *92*(3), 423–433. https://doi.org/10.1016/j.mayocp.2017.01.001

Nelson-Brantley, H. V., & Chipps, E. (2021). Implementation science and nursing leadership: Improving the adoption and sustainability of evidence-based practice. *The Journal of Nursing Administration*, *51*(5), 237–239. https://doi.org/10.1097/NNA.0000000000001006

Padula, W. V., Gibbons, R. D., Valuck, R. J., Makic, M. B. F., Mishra, M. K., Pronovost, P. J., & Meltzer, D. O. (2016). Are evidence-based practices associated with effective prevention of hospital-acquired pressure ulcers in US academic medical centers? *Medical Care*, *54*(5), 512–518. https://doi.org/10.1097/MLR.0000000000000516

Pancorbo-Hidalgo, P. L., García Fernández, F. P., Torra Bou, J. E., Verdú Soriano, J., & Soldevilla Ágreda, J. J. (2014). Epidemiology of pressure ulcers in Spain in 2013: 4th National Prevalence Study. *Gerokomos*, *25*(4), 162–170. https://doi.org/10.4321/S1134-928X2014000400006

Pancorbo-Hidalgo, P. L., García-Fernández, F. P., Pérez-López, C., & Soldevilla-Agreda, J. J. (2019). Prevalence of pressure injuries and other dependence-related skin lesions in primary healthcare centres in Spain in 2017. *Gerokomos*, *30*(2), 76–86.

Porcel-Gálvez, A. M., Allande-Cussó, R., Fernández-García, E., Naharro-Álvarez, A., & Barrientos-Trigo, S. (2022). Predictive validity of the INTEGRARE scale in identifying the risk of hospital-acquired pressure ulcers in acute care hospital settings. *Journal of Tissue Viability*, *31*(2), 339–345. https://doi.org/10.1016/j.jtv.2022.01.001

Porter-Armstrong, A. P., Moore, Z. E., Bradbury, I., & McDonough, S. (2018). Education of healthcare professionals for preventing pressure ulcers. *The Cochrane Database of Systematic Reviews*, *5*(5), CD011620. https://doi.org/10.1002/14651858.CD011620.pub2

Quiñoz-Gallardo, M. D., Barrientos-Trigo, S., & Porcel-Gálvez, A. M. (2021). Effect of the guideline implementation "risk assessment and prevention of pressure ulcers" of the registered Nurses'Association of Ontario (RNAO). *Revista Española de Salud Pública*, *95*, e202109126.

Quiñoz-Gallardo, M. D., Gonzalo-Jiménez, E., Barrientos-Trillo, S., & Porcel-Gálvez, A. M. (2021). Implementation of the "best practice spotlight organization" program at the Virgen de las Nieves university hospital. *Revista Española de Salud Pública*, *95*, e202110128.

Registered Nurses' Association of Ontario. (2011). Risk assessment and prevention of pressure ulcers. http://rnao.ca/sites/rnao-ca/files/D0025_UlcerasPresion_spp_01052015.pdf

Registered Nurses' Association of Ontario. (2012). *Herramienta de implantación de buenas prácticas* (2nd ed.). RNAO. https://rnao.ca/sites/rnao-ca/files/RNAO_ToolKit_2012_rev4_FA.pdf

Renolen, Å., Hjälmhult, E., Høye, S., Danbolt, L. J., & Kirkevold, M. (2020). Creating room for evidence-based practice: Leader behavior in hospital wards. *Research in Nursing & Health*, *43*(1), 90–102. https://doi.org/10.1002/nur.21981

Rice, W. R. (1989). Analyzing tables of statistical tests. *Evolution*, *43*(1), 223–225. https://doi.org/10.2307/2409177

Ruzafa-Martinez, M., Harillo-Acevedo, D., & Ramos-Morcillo, A. J. (2021). Monitoring of the implementation of a breastfeeding guideline for 6 years: A mixed-methods study using an interrupted time series approach. *Journal of Nursing Scholarship*, *53*(3), 358–368. https://doi.org/10.1111/jnu.12636

Scovil, C. Y., Delparte, J. J., Walia, S., Flett, H. M., Guy, S. D., Wallace, M., Burns, A. S., Wolfe, D. L., & SCI KMN Group. (2019). Implementation of pressure injury prevention best practices across 6 Canadian rehabilitation sites: Results from the spinal cord injury knowledge mobilization network. *Archives of Physical Medicine and Rehabilitation*, *100*(2), 327–335. https://doi.org/10.1016/j.apmr.2018.07.444

Sinn, C. L., Tran, J., Pauley, T., & Hirdes, J. (2016). Predicting adverse outcomes after discharge from complex continuing care hospital settings to the community. *Professional Case Management*, *21*(3), 127–E4. https://doi.org/10.1097/NCM.0000000000000148

Smith, S. K., Ashby, S. E., Thomas, L., & Williams, F. (2018). Evaluation of a multifactorial approach to reduce the prevalence of pressure injuries in regional Australian acute inpatient care settings. *International Wound Journal*, *15*(1), 95–105. https://doi.org/10.1111/iwj.12840

Theeranut, A., Ninbanphot, S., & Limpawattana, P. (2021). Comparison of four pressure ulcer risk assessment tools in critically ill patients. *Nursing in Critical Care*, *26*(1), 48–54. https://doi.org/10.1111/nicc.12511

Torra-Bou, J. E., Verdú-Soriano, J., Sarabia-Lavin, R., Paras-Bravo, P., Soldevilla-Ágreda, J. J., & García-Fernández, F. P. (2016). Pressure ulcers as a safety patient problem. *Gerokomos*, *27*(4), 161–167.

Välimäki, T., Partanen, P., & Häggman-Laitila, A. (2018). An integrative review of interventions for enhancing leadership in the implementation of evidence-based nursing. *Worldviews on Evidence-Based Nursing*, *15*(6), 424–431. https://doi.org/10.1111/wvn.12331

Wu, Y., Brettle, A., Zhou, C., Ou, J., Wang, Y., & Wang, S. (2018). Do educational interventions aimed at nurses to support the implementation of evidence-based practice improve patient outcomes? A systematic review. *Nurse Education Today*, *70*, 109–114. https://doi.org/10.1016/j.nedt.2018.08.026

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