

ORIGINAL ARTICLE

Self-assessment of a breast care nursing model within a Breast Unit: learning process and keys to improving breast care

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Abstract

Aim and objectives: To assess the adherence of a nursing care model in a multidisciplinary breast cancer unit in a tertiary hospital to the recommended competencies and quality indicators.

Background: Aligning the competencies of the breast care nurse with international recommendations for this role helps better fulfil patient needs, increases satisfaction and ensures continuity of care.

Design: Cohort study.

Methods: Breast care nursing was assessed in all patients treated at the Functional Breast Unit from 1 July 2016 to 30 June 2017. Patients were followed for 1 year. Sociodemographic, clinical and pathological data, treatments performed and nursing interventions were collected. The strobe checklist has been used to report this study.

Results: We analysed nursing interventions carried out in 382 patients attended over 1 year in a multidisciplinary breast cancer unit. All patients with early disease had contact with the nurse at different times during their primary treatment. Only 58% of patients with advanced disease had contact with the nurse during their first year of illness. Moreover, first contact with the nurse was delayed by more than a week from diagnosis, the interval recommended by international guidelines.

Conclusion: The nursing care model meets the core competencies defined for the breast care nurse in patients with early breast cancer, but the first visit should be organised earlier, and follow-up should extend beyond completion of primary treatment.

Relevance to clinical practice: This study evaluated the breast care nurse model in one breast cancer unit according to international guidelines. Nursing care adhered to most guideline requirements in patients with early breast cancer, but not in those with advanced disease. New models of care need to be developed for women with advanced breast cancer in order to achieve true patient-centred care.

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Patient or public contribution: No contribution from the patient or the public because the data collected was entered into the clinical history by the health professionals of the Breast Unit as part of their usual clinical practice.

KEYWORDS

accreditation, breast care nurse, breast cancer, breast unit, nurse's role, nursing

1 | INTRODUCTION

Breast cancer remains the most common cancer among women worldwide (Bray et al., 2018), but early detection and treatment by a multidisciplinary team (MDT) specialising in breast cancer can improve survival and quality of life (Biganzoli et al., 2017; Kesson, Allardice, George, Burns & Morrison, 2012). Different international organisations (American College of Surgeons, 2018; Biganzoli et al., 2020; Senologic International Society, n.d.) have laid out what multidisciplinary breast units need to do to guarantee quality of care and improve survival rates. One of these requirements is that a breast care nurse (BCN) with specialised training in breast care nursing be a member of the MDT.

2 | BACKGROUND

The BCN is "a registered nurse who applies advanced knowledge of the health needs, preferences and circumstances of women with breast cancer to optimize the individual's health and wellbeing at various phases across the continuum of care, including diagnosis, treatment, rehabilitation, follow-up and palliative care" (Cataliotti et al., 2007). While this figure is considered to have a highly specialised role (Yates et al., 2007), there is no international consensus on their competencies, training or even their job title (Eicher et al., 2012). However, a review of the five major international guidelines has indicated that the BCN has several major competencies: holistic needs assessment, health education and information, emotional support, decision-making support, support to families and caregivers, care coordination and continuity, consultation with other health professionals when needed, and presence during different phases of breast cancer care (diagnosis, treatment and follow-up) (American College of Surgeons, 2018; Biganzoli et al., 2017; Cataliotti et al., 2007; Eicher et al., 2012; Yates et al., 2007).

When BCNs provide care according to these core competencies, they improve patients' and MDTs' experiences as well as care continuity; moreover, patients' needs are better met and they feel more satisfied with their care, especially when BCNs are involved early on (Rodriguez-Ortega et al., 2021).

The European Society of Breast Cancer Specialists (EUSOMA) is an accrediting organisation, providing breast centres with quality certification. For EUSOMA, the BCN is directly responsible for patient care as well as management of care and the care process, and

What does this paper contribute to the wider global clinical community?

- The breast care nurse must see patients within a week of diagnosis.
- The breast care nurse must be present at all times during treatment and follow-up.
- The early disease care model may not be ideal for patients with advanced disease.

TABLE 1 Quality criteria for the Breast Care Nurse, as defined by the European Society of Breast Cancer Specialists (EUSOMA) (Biganzoli et al., 2017, 2020)

Quality indicators

- Proportion of patients for nurse counselling at the time of primary treatment (minimum 85%, objective 95%)
- Proportion of women with a diagnosis of breast cancer who have direct access to a breast care nurse specialist for information and support with treatment-related symptoms and toxicity during the treatment, follow-up and rehabilitation after initial treatment (minimum 95%, objective 99%)

Other quality criteria

- Breast care nurses must document their meetings with patients. Record keeping is an essential part of nursing care and promotes high quality, effective and safe care as the information can be important for use by other professionals in the MDT.
- Breast care nurses must attend the multidisciplinary meetings.
- Patients must receive basic psychological counselling and emotional support from a breast nurse or another professional trained in the psychological aspects of breast cancer care.
- Geriatric oncology patients should undergo a full geriatric assessment, which can be performed by the breast care nurse in collaboration with a physician.
- Medical oncologists and breast care nurses are usually responsible for basic palliative care such as symptom control and screening for disease- and treatment-related symptoms and suffering.
- Lifestyle counselling should include home-based exercise and is an important supportive role for the breast care nurse.

the role must adhere to explicitly defined quality indicators (Table 1; Biganzoli et al., 2017, 2020).

This self-assessment aimed to evaluate a nursing care model in a multidisciplinary breast cancer unit in terms of its adherence to the

core competencies defined by international guidelines for the BCN and to the EUSOMA quality indicators for this role.

3 | METHODS

3.1 | Design

This retrospective cohort study took place in the Functional Breast Unit (FBU) of the Institut Català d'Oncologia (ICO), a specialised cancer centre, and in the Bellvitge University Hospital, a tertiary hospital in the Barcelona metropolitan area. FBU staff includes doctors and advanced practice nurses specialising in breast cancer.

Figure 1 shows the standardised BCN contacts according to the treatments received by the patient and their sequence. Table 2 presents the competencies performed by the BCN on each of the encounters. The BCN's first visit takes place before the first treatment is administered. In addition, the BCN provides surgical wound care along with visits prior to initiating adjuvant treatments, during chemotherapy and upon finalisation of the treatment. During the nursing encounters, the BCN assesses the patient's needs, provides health education and emotional support, and manages any contingencies that arise, either through their own activities or via referrals to other professionals.

Each patient is assigned to one of the three BCNs in the centre, who is responsible for visiting her throughout her treatment. Thus, the role of the BCN involves direct patient care and case management activities, along with specific activities laid out in the unit's care protocol, including in care circuits, clinical pathways, procedures and educational documents for patients.

3.2 | Participants

To assess the activity of the multidisciplinary unit and the BCNs within it, all patients treated at the FBU in one year were evaluated. Patients with a first visit at the FBU between 1 July 2016 and 30 June 2017, who were diagnosed with breast cancer for the first time or with a relapse (local or distant) were eligible. Exclusion criteria were: diagnosed with benign phyllodes tumour, lobular carcinoma in situ or sarcoma; received part of the treatment in another centre; patient decision to not undergo surgical treatment (early disease); and treated exclusively with hormone therapy (advanced disease). Patients were followed for one year from the date of the first visit in the FBU.

3.3 | Data collection and ethical considerations

The variables collected were: sociodemographic data (age, sex, employment status, cohabitation, economic difficulties and social support); clinical and pathological data (clinical stage of the disease, first diagnosis or recurrence); treatments performed; and nursing

interventions (according to the core competencies of the role and the EUSOMA recommendations).

The clinical research ethics committee of the Bellvitge University Hospital approved the study protocol (reference PR269/18).

3.4 | Data analysis

The principal investigator extracted data from the patients' clinical history from July to December 2018; data were stored in a database for later use using the SPSS statistical package version 21 (IBM). A descriptive analysis was performed according to the type of variable, with categorical variables expressed as absolutes and relative frequencies, and continuous variables as mean or median and range or 95% confidence intervals (CI).

The data collected were entered into the clinical history by the health professionals in the Breast Unit as a matter of routine clinical practice. Data collection took place after the follow-up period in the included patients. The professionals were unaware that the present study would be carried out.

The STROBE checklist has been used to report this study (File S1).

4 | RESULTS

The initial study population was 425 patients; after applying exclusion criteria, the final sample numbered 382 patients (Figure 2).

Table 3 presents the sample's sociodemographic and clinical characteristics. Patients' median age was 58 years; 85% of patients had early disease and 15%, metastases. Advanced disease was present in 4% of the patients at the time of diagnosis, and 21% of the patients were being treated for a recurrence. Regarding treatment, 85% received surgery; 47%, chemotherapy; 79%, radiotherapy; and 77%, hormone therapy.

Table 4 shows the number of patients visited by the BCNs according to the treatments administered as well as the proportion of visits performed on patient demand relative to the total visits.

Nearly all (98%) patients with early disease were counselled by the BCN if their first treatment was surgery or neoadjuvant chemotherapy, but this proportion dropped to just 4.5% in the patients who initially received hormone therapy. On average, patients with early disease received 9.5 counselling sessions from their BCN during treatment. On the other hand, among patients with advanced disease, 43% saw the BCN before the first chemotherapy treatment and 27% before receiving initial hormone therapy. This group had an average of 4.7 contacts with their BCN during the first year of treatment.

Table 5 shows the process outcomes for the BCN interventions at FBU, according to the EUSOMA quality indicators. All patients with early disease had contact with the nurse during their primary treatment, but only 58% of patients with advanced disease did so. The mean interval from diagnosis to the first BCN visit was 25 days

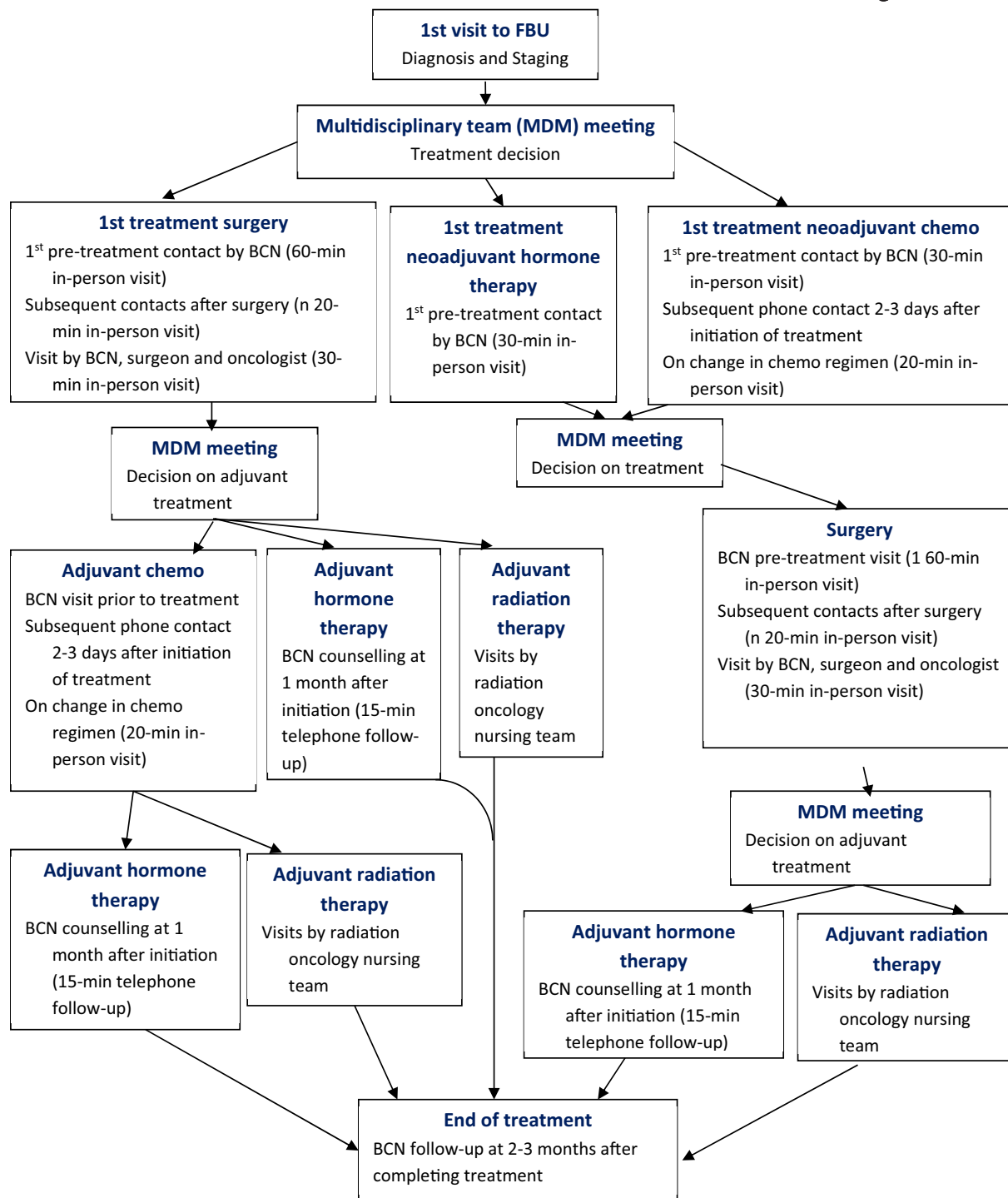


FIGURE 1 Breast Care Nurse (BCN) model in the Functional Breast Unit (FBU) of the Institut Català d'Oncologia: BCN visits according to the treatment administered to patients [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/jocn.16659)]

if the initial treatment was surgery, 18 days for chemotherapy and 182 days for hormonal therapy.

5 | DISCUSSION

Since the FBU was founded over 30 years ago, its professional workforce and portfolio of services have grown and diversified,

including through the establishment of the BCN role in 1995. At the time of writing, there were three full-time BCNs, and the FBU team considered it timely to self-assess the quality of BCN care, comparing the interventions carried out with the core competencies and published quality indicators. Although an external evaluation may have been more objective, this self-assessment constituted an internal learning process, highlighting areas of improvement that we have already begun to address and which

TABLE 2 Breast care nurse model at the functional breast unit (FBU) of the Institut Català d'Oncologia: BCN visits according to the treatment administered to patients

BCN competencies	Treatment initiation	During treatment	Post-surgery	End of treatment
Comprehensive needs assessment	✓	✓	✓	✓
Emotional support to patient and caretaker	✓	✓	✓	✓
Health education, on:		✓		
Breast cancer	✓			
Treatment	✓			
In case of surgery: surgical wound care		✓		
In case of chemotherapy, hormone therapy or radiation therapy: self-care and warning signs		✓	✓	✓
Healthy behaviours	✓	✓		✓
Information				
Circuits	✓		✓	✓
Resources in and outside of hospital	✓	✓		✓
Pathological anatomy results			✓	
Help with decision-making	✓			
Collaboration with other professionals if needed, normally:				
Psycho-oncology, social work	✓	✓	✓	✓
Rehabilitation, physiotherapy		✓	✓	✓
Surgery		✓		✓
In case of surgery:				
Wound dressing		✓	✓	
Surgical preparation if needed	✓			
Post-surgical follow-up	✓			
Preoperative check and 1st visit from anaesthesiologist	✓			
Schedule follow-up wound care until healing		✓	✓	
In case of chemotherapy:				
Oncogeriatric screening, if needed	✓			
Schedule follow-up to monitor toxicity	✓	✓		
Referral to day hospital nursing services	✓			
Management of central lines	✓	✓		
Monitoring of toxicity		✓		✓
Schedule follow-up to monitor toxicity		✓		
In case of hormone therapy:				
Monitoring of toxicity		✓		✓
Promote treatment adherence		✓		
Schedule end-of-treatment visit			✓	

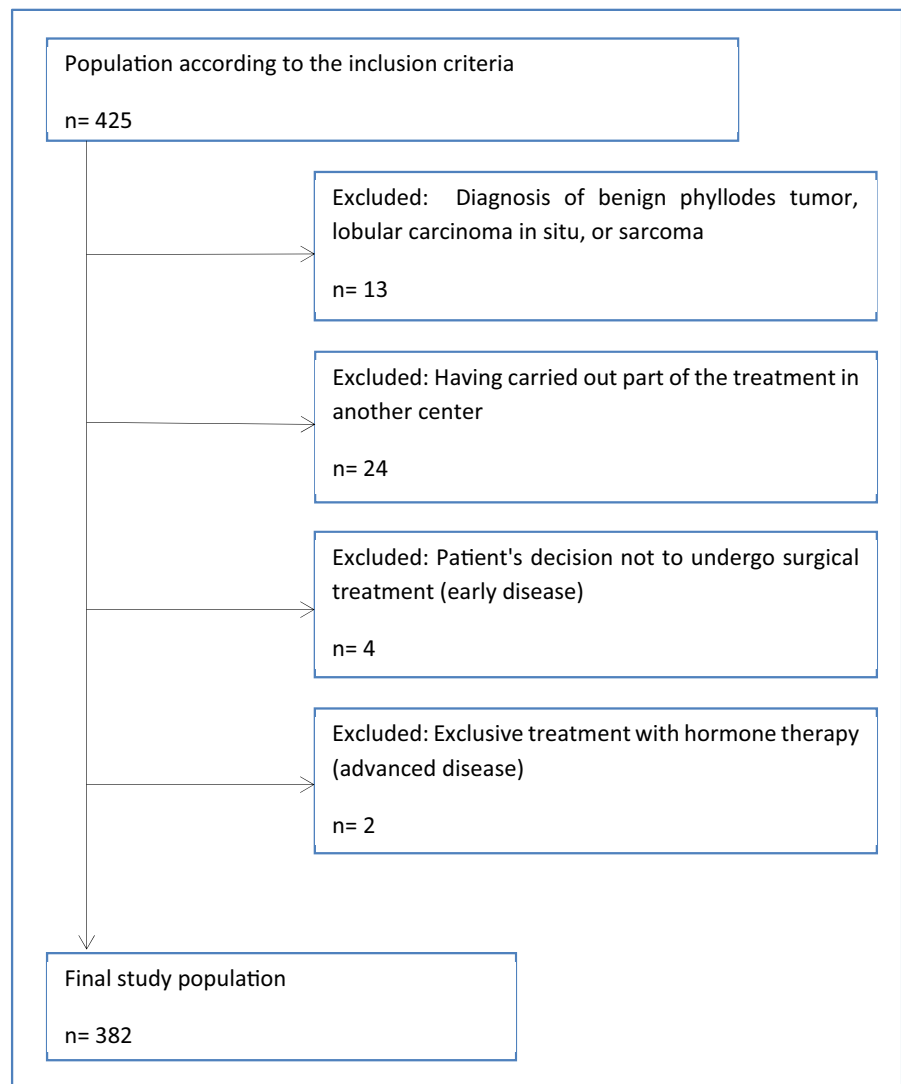
will enable our centre to apply for FBU accreditation with more guarantees of success. While our results show that adherence to international recommendations is near 100% in patients with early disease, it is currently under 60% in patients with advanced disease.

One change we are implementing is to divide the first nursing visit into two parts: the first, which takes place within a week of diagnosis, will consist of a comprehensive needs assessment and

provision of emotional support; during the second, the nurse will offer health education about the first treatment, as proposed by the tumour board. Other questions with regard to the BCN care model include when the first contact between the patient and the BCN should take place, how many visits are needed, and at what time points the BCN should visit the patients.

Our care model envisages the first contact with the nurse only after a treatment decision has been made, which delays contact by

FIGURE 2 Patient selection flow chart [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/jocn.16659)]



about three weeks. When the first treatment is hormone therapy, this first contact is postponed until surgery, about six months later.

EUSOMA recommends completing the first nurse visit within a week of diagnosis, which is in line with patient preferences and contributes to better outcomes for patients, health services and the health system in general (Kadmon et al., 2015; Mahony et al., 2019; Rohsig et al., 2019). This difference reveals a clear area of improvement needed in our care model, which we have already begun to change: patients are already being referred to the nurse upon cancer diagnosis, before any treatment decisions are made.

At the FBU, the BCN model for patients with early disease calls for at least 4–8 counselling sessions, depending on the treatments administered (Figure 1). Our results show that in practice, patients receive an average of 9.5 nurse contacts, including once before the treatment starts and others during treatment and shortly after completion. The model only includes follow-up care upon the request of the patient. Most visits are face-to-face, while telephone counselling is aimed at detecting and controlling toxicities or symptoms. As a result of the SARS-CoV-2 pandemic, the percentage of telephone follow-ups has increased.

The literature contains descriptions of different BCN care models, which contemplate 5–12 visits per patient. These usually begin at diagnosis, extend across all the different treatments and across health service settings, and last until the postoperative period or beyond, to survivorship. The authors presenting BCN models that do not protocolise survivorship follow-up raise the question of whether it should be included. The BCNs in the models discussed provide emotional support, refer patients to other professionals, answer questions about diagnosis and treatment, coordinate visits and tests, solve problems related to health insurance, and coordinate the transition between levels of care, among other competencies (Liebert et al., 2001, 2003; Mahony et al., 2019; Rohsig et al., 2019).

Regarding modalities of survivorship care, evidence suggests that telephone counselling by advanced practice nurses, with the aim of following patients with breast cancer, increases patients' quality of life and is a sustainable resource for the health system (Díaz-Periáñez, 2021).

In our model, the BCN counsels patients at the beginning and during chemotherapy treatment, both in person and by

TABLE 3 Socio-demographic and clinical characteristics
(*n* = 382).

Variable	Patients	
Age in years, median (range)	58 (25–89)	
	N	%
Sex		
Female	379	99.2
Employment status		
Specialised	73	19.1
Unskilled	82	21.5
Unemployed or retired	187	48.9
Self-employed	2	0.5
Missing data	38	10
Living situation		
Lives alone	61	16
Lives with husband/partner	116	30.4
Lives with children	42	11
Lives with husband/partner and children	120	31.4
Lives with parents	10	2.6
Others	21	5.5
Missing data	12	3.1
Financial concerns/worries	20	5.2
Lack of social support	29	7.6
Stage		
0	54	14.14
IA	115	30.10
IB	2	0.52
IIA	72	18.85
IIB	41	10.73
IIIA	15	3.93
IIIB	19	4.97
IIIC	7	1.83
IV	57	14.92
First breast cancer diagnosis	301	78.8
Early disease	289	96
Metastatic disease	12	4
Recurrence	81	21.2
Local recurrence	36	44.4
Distant relapse	45	55.6
Surgery		
Yes	332	86.9
Early disease	325	100
Metastatic disease	7	12.3
Breast surgery type		
Lumpectomy	130	39.9
Wide lumpectomy	101	31

TABLE 3 (Continued)

	N	%
Mastectomy	95	29.1
Immediate reconstruction/ oncoplasty	175	53.7
Armpit surgery	279	85.6
Armpit surgery type		
Sentinel lymph node biopsy	192	68.8
Axillary lymph node dissection	87	31.2
Chemotherapy	182	47.6
Type of chemotherapy		
Neoadjuvant	80	44
Adjuvant	62	34
In metastatic disease	40	22
Radiotherapy	303	79.3
Type of radiotherapy		
Adjuvant	244	80.5
Intraoperative	16	5.3
Intraoperative and adjuvant	20	6.6
In metastatic location	23	7.6
Endocrine therapy	295	77.2
Type of endocrine therapy		
Neoadjuvant	23	7.8
Adjuvant	227	76.9
In metastatic disease	45	15.3
Participation in clinical trial	99	25.9

telephone, scheduled or at the request of the patient. Likewise, other models include BCN visits during chemotherapy treatment, with competencies such as providing emotional support to the patient and her family, informing them about the expected side effects, monitoring toxicities and improving adherence to treatment. Outcomes are improved levels of emotional discomfort and quality of life, as well as reductions in unplanned admissions (Beaver et al., 2015; Kim et al., 2018; Bayram, Durna & Akin, 2014; Traeger et al, 2015).

The FBU model includes a visit at the end of treatment. The BCN reviews the treatment experience with the patient and counsels her on the return to normality, taking into account the consequences of this period in their lives. This visit is a good opportunity to promote healthy behaviours.

The Institute of Medicine (IOM) and the Clinical Oncology Society of Australia (COSA) recommend developing a survivorship care plan at the end of treatment. This consists of a summary of the treatment and a follow-up plan to address survivors' long-term needs (Joshi et al., 2021). The model described by Post et al. (2016) includes one follow-up after finishing the primary treatment, similar to the of the FBU model, where the nurse and the patient review the different aspects of the survivorship care plan, including information on their tests and follow-up visits, recommendations on healthy behaviours, emotional and spiritual health and rehabilitation.

TABLE 4 Patients attended by the breast care nurse (BCN) according to treatment, and proportion of visits performed on patient demand relative to the total visits performed ($N = 382$)

Patients with early disease							N 325
Mean visits/patient							9.5
% BCN visits demanded by patient vs performed following surgery							8
% BCN visits demanded by patient vs performed during chemotherapy +/- targeted therapy							20
1st treatment neoadjuvant chemotherapy							
Time point of BCN visit	1st BCN visit	During chemotherapy	Pre-operative	Post-operative	Pre-radiotherapy	Pre-hormone therapy	End of treatment
N patients treated	79	79	79	79	70	54	79
N (%) patients visited by BCN	77 (97.5)	75 (94.9)	78 (98.7)	79 (100)	67 (95.7)	52 (96.3)	68 (86.1)
1st treatment surgery							
Time point of BCN visit	1st BCN visit	Post-operative	Pre-chemo	During chemo	Pre-radiotherapy	Pre-hormone therapy	End of treatment
N patients treated	224	224	54	54	192	174	224
N (%) patients visited by BCN	221 (98.7)	221 (98.7)	54 (100)	52 (96.3)	141 (73.4)	126 (72.4)	148 (66.1)
1st treatment hormone therapy							
Time point of BCN visit	1st BCN visit	Pre-operative	Post-operative	Pre-chemo	During chemo	Pre-radiotherapy	End of treatment
N patients treated	22	22	22	8	8	18	22
N (%) patients visited by BCN	1 (4.5)	21 (95.5)	22 (100)	7 (87.5)	8 (100)	12 (66.6)	15 (68.2)
Patients with advanced disease							N = 57
Mean visits/patient							4.7
% BCN visits demanded by patient vs performed during chemotherapy +/- targeted therapy							39
1st treatment chemotherapy +/- targeted therapy							
Time point of BCN visit			1st BCN visit			During chemo +/- targeted therapy	
N patients treated			16			26	
N (%) patients visited by BCN			10 (42.9)			21 (80.7)	
1st treatment hormone therapy +/- targeted therapy							
Time point of BCN visit			1st BCN visit			During hormone therapy +/- targeted therapy	
N patients treated			30			30	
N (%) patients visited by BCN			8 (26.7)			7 (23.3)	
1st treatment radiotherapy +/- surgery							
Time point of BCN visit			1st BCN visit			During radiotherapy/post-operative	
N patients treated			11			11	
N (%) patients visited by BCN			6 (54.6)			4 (36.4)	

Jiwa et al. (2010) concluded that a 5- to 10-year follow-up by the BCN is beneficial in terms of normalising and promoting a proactive approach. In contrast, other models call for a similar follow-up intervention, but carried out by a nurse other than the BCN (Calton, 2017).

At the FBU, follow-up by the BCN in the first years after the end of treatment could improve long-term adherence to healthy

behaviours, but this expansion of services would require staffing more BCNs in the unit.

The results of our study show that only 56% of patients with advanced disease are referred to the BCN during primary treatment, while the proportion of visits performed on demand relative to the total during systemic treatment is 39%—practically double that for

TABLE 5 BCN process outcomes, according to EUSOMA quality indicators (Biganzoli et al., 2017) ($n = 382$)

		N	%
Proportion of patients receiving nurse counselling at the time of primary treatment (minimum 85%, objective 95%)			
Early	Yes	325	100
Metastatic	Yes	33	57.9
Proportion of women with a diagnosis of breast cancer who have direct access to a breast care nurse specialist for information and support with treatment-related symptoms and toxicity during the treatment, follow-up and rehabilitation after initial treatment. (minimum 95%, objective 99%)			
Early	Visited by the nurse before treatments	321	98.8
	Visited by the nurse during treatments	322	99.1
	Visited by the nurse after finishing the treatments	230	70.8
Metastatic	Visited by the nurse before treatments	32	56.1
	Visited by the nurse during treatments	33	57.9
		Mean	95% CI
The breast nurse must be present during the clinic or must meet the patient immediately afterwards or within a maximum of one week after diagnosis			
Days from cancer diagnosis to first BCN visit			
First treatment	Surgery	25.13	22.44–27.82
	Chemotherapy	17.60	11.08–24.12
	Endocrine therapy	181.70	139.28–224.11

the same type of treatment in patients with early disease and more than four times that of patients treated surgically. Our care model is closely linked to treatment, so if the planned treatment changes due to disease progression or toxicity, the BCN may lose contact with the patient unless the patient herself requests a visit.

The literature shows that inadequate models result in an underestimation of patient needs, and a high percentage of patients do not benefit from early and continuous access to BCN, despite having multiple and complex health needs (Blaschke et al., 2019; Reed, Scanlon & Fenlon, 2010). Some models recommend that an oncology nurse specialising in advanced breast cancer care attends these patients, while other models advocate a multidisciplinary team dedicated to patients with advanced breast cancer (Blaschke et al., 2019; Vila et al., 2016).

Although this group of patients represents a minority compared to those with early disease, follow-up can last over 15 years, so the total number of counselling sessions for each patient consumes a significant volume of resources (Blaschke et al., 2019; Cardoso et al., 2020). One recent study showed how an app can facilitate the daily assessment of the most indicative symptoms of discomfort, prompting a modification of the schedule of visits, if required (Schmitz et al., 2020).

To improve follow-up in patients with advanced disease at the FBU, the visits made by the medical oncologist and the BCN have been defined according to the treatments administered. In addition, the BCN schedules telephone follow-ups every 1, 3 or 6 months (depending on patient needs); this contact provides the nurse with the opportunity to periodically review the patient's clinical history to monitor the evolution of the disease, assess patient needs and intervene if necessary.

5.1 | Limitations

Our study is a self-assessment of a specific care model, making it difficult to extrapolate our conclusions to the models in other institutions. However, the active learning process supporting our conclusions will enable us to move forward in improving care for our patients, which we think is necessary in teams with a long history, as is our case.

In addition, we studied patient follow-up for just one year, which is sufficient in patients with early disease, whose treatment does not exceed this time period. For patients with advanced disease, treatment usually extends over several years. However, the present study takes into account the time of the first contact with the nurse, and often, in that first year, the patient receives more than one course or type of treatment.

6 | CONCLUSION

One lesson we have learned during the performance of this study is the importance of reflecting on and evaluating the care model that is offered, comparing it with other models and international guidelines. We have verified that in patients with early disease, the BCN care model in our centre is largely adherent to the core competencies of the role and to the EUSOMA indicators, thanks to the standardisation of the circuits established for breast cancer care. On the other hand, we have detected some gaps, such as ensuring that the nurse's first visit takes place within a week of diagnosis, regardless of the intent or modality of treatment, and extending nursing care to post-treatment follow-up, probably following an assessment of the need for and intensity of this care in each patient. The nurse who cared

for the patient during the perioperative period should probably be the same one to continue exercising this role during adjuvant treatments and follow-up.

Our model does not have a defined survivorship care plan, but such a component could improve patients' knowledge, coordination and communication and patient-reported outcomes like quality of life and satisfaction with care (Joshi et al., 2021).

Regarding care for patients with advanced disease, we know that our model does not meet the stated requirements, because the care circuits associated with this process are very changeable. This model requires a care system that responds to patients' needs for support, information and safety until the complete transfer to the palliative care team. We must consider new models of care, evaluate which best responds to the required quality levels, and translate them into clinical practice in order to achieve true patient-centred care.

7 | RELEVANCE TO CLINICAL PRACTICE

This study evaluated the breast care nurse model in one breast cancer unit according to international guidelines. Nursing care adhered to most guideline requirements in patients with early breast cancer, but not in those with advanced disease. New models of care need to be developed for women with advanced breast cancer in order to achieve true patient-centred care.

AUTHOR CONTRIBUTIONS

AR-O: conceived of the presented idea, developed the theoretical framework, carried out the implementation of the data, performed the calculations, wrote the manuscript with support from all authors. TF: conceived of the presented idea, supervised the project. XP: designed the model and the computational framework and analysed the data. MJPF, MG-G, ALO: contributed to the analysis of the results and to the writing of the manuscript. JMB: conceived of the presented idea, was in charge of the general management.

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CONFLICT OF INTEREST STATEMENT

The authors declared no conflict of interest.

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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