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Nursing Care and Radiation Therapy in Women Affected by Breast Cancer: A Scoping Review

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ABSTRACT

Objective: To describe and summarize the scientific literature on nursing educational interventions during the radiotherapy pathway for women affected by breast cancer

Context: Nowadays, the key strategy for successful healthcare organizations lies on the nursing executive's ability to develop advanced management skills. However, systematic reviews that synthesise knowledge about educational and informational nursing interventions are lacking.

Assessment: A scope review was conducted using electronic databases including PubMed, Cinahl, Embase, and Nursing & Allied Health Database.

Key Questions: After the first analysis, 35 articles were selected and only 9 answered the research question. The interventions most frequently analyzed concern those of psychoeducational programs which have given positive results during the radiotherapy treatment in terms of reduction of stress and depression.

Conclusion: Knowing the educational and informational interventions implemented by nurses during the radiotherapy process can help organizations to create strategies aiming to increase person-centered clinical care processes. Furthermore, we can deduce which interventions could be more functional and usable.

Implications for nursing care: Nursing care provides for take-charge of the patient in a holistic way in all phases of his care pathway and promotes the protection of the right psycho-physical well-being.

Keywords: Breast Neoplasm; Nursing Education; Nursing Information; Radiation Therapy

Abbreviations: RT: Radiation Therapy; CASP: Critical Appraisal Skills Programme; RCT: Randomized Controlled Trial; CRD: Center for Reviews and Dissemination; CAT: Complementary and Alternative Treatments

Introduction

"The nurse is temporarily the consciousness of the unconscious, the love of life of the suicidal, the leg of the amputee, the eyes of the newly blind, a means of locomotion for the newborn, knowledge and confidence for the young mother, a voice for those too weak to speak" (Virginia Henderson) [1]. The «voice» of women affected by breast cancer results in a stressful experience primarily due to the long-term effects of medical-surgical care, the constant doctor visits, as well as work and economic implications. The diagnosis of cancer affects the role of the woman and her everyday family life. Breast cancer has a global incidence of 47.8% among cancer diseases [2]. It represents a global health burden as it affects the lives of people in all regions and at different socioeconomic levels. Radiation therapy

(RT) plays a fundamental role in the multidisciplinary treatment of breast cancer. Despite the curative effect, RT can cause multiple physical and psychological side effects, compromising the woman's quality of life and its functional condition [3]. The nurse who cares for breast cancer patients undergoing RT must know the modality of the radiation treatment and the specific radiation target. Every patient receives a large variety of structured and well-defined information related to radiation treatment. In this context, high-quality educational interventions based on care continuity could guarantee an improvement in the pathway for the treated women and an enhancement in treatment compliance. The nurse should assist patients to anticipate and to manage the main side effects of the therapy, including the stress-correlated ones. To date, from the literature reviewed, no reviews have been conducted to describe nursing interventions during RT treatments in women with breast cancer. Thus, the aim of this work was to summarize the available evidence of educational and supportive interventions for women with breast cancer undergoing RT.

Methods

The Arksey and O'Malley [4] methodological framework used in this work is divided into six phases:

1. Research questions formulation,
2. Relevant studies identification,
3. Studies selection,
4. Data plotting,
5. Findings collection, summarization, and reporting,
6. Consultations (not used in this work).

The reporting is in accordance with the Preferred Reporting Item for Systematic Review and Meta-analysis for Scoping Review (PRISMA-ScR) [5]. The PCC model described by the Joanna Briggs Institute [6] was used to formulate the research question (the baseline of the scoping review), as follow:

- P: Breast cancer patients
- C: Nursing education
- C: Radiotherapy treatment

We Queried the Following Databases: PubMed, EMBASE, CINAHL, and Nursing & Allied Health Database. The identified and then combined main terms (keywords) used for the literature survey (including MeSH terms) are then combined to the free-text words by using the Boolean operators of exclusion and inclusion, and respectively (Figure 1). The records were managed using ProQuest LLC RefWorks® bibliographic management software. The criteria for inclusion of articles in this scoping review were as follows: articles published between 1st of January 2013 and 31st of January 2023; articles written in English, providing information on nursing education for women with breast cancer undergoing radiotherapy treatment; quantitative and qualitative papers; theses, dissertations, and review articles. Articles from the last 10 years were included to ensure synthesis of up-to-date knowledge, whereas nursing education for women with breast cancer has evolved over the past few years. The inclusion of gray literature was to ensure the completeness of existing knowledge on the topic. The exclusion criteria were documents that did not report information about nursing education in radiotherapy units. After eliminating duplicates, studies were screened by title and abstract (Figure 2). The data appraisal was performed by two researchers (IF and ST) using the Critical Appraisal Skills Programme (CASP) Qualitative Research Checklist for qualitative studies [7]. Center for Reviews and Dissemination (CRD) guidance for undertaking reviews in health care [8] was used to analyze quantitative and mixed method studies. These two tools have been used to ensure the validity of the instrument used and to justify the methodological approach of the study.

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" ((("breast neoplasms"[MeSH Terms] OR ("breast"[All Fields] AND "neoplasms"[All Fields]) OR
"breast neoplasms"[All Fields] OR ("breast"[All Fields] AND "cancer"[All Fields]) OR "breast
cancer"[All Fields]) AND (("nurse s"[All Fields] OR "nurses"[MeSH Terms] OR "nurses"[All Fields] OR
"nurse"[All Fields] OR "nurses s"[All Fields]) AND ("educability"[All Fields] OR "educable"[All Fields]
OR "educates"[All Fields] OR "education"[MeSH Subheading] OR "education"[All Fields] OR
"educational status"[MeSH Terms] OR ("educational"[All Fields] AND "status"[All Fields]) OR
"educational status"[All Fields] OR "education"[MeSH Terms] OR "education s"[All Fields] OR
"educational"[All Fields] OR "educative"[All Fields] OR "educator"[All Fields] OR "educator s"[All
Fields] OR "educators"[All Fields] OR "teaching"[MeSH Terms] OR "teaching"[All Fields] OR
"educate"[All Fields] OR "educated"[All Fields] OR "educating"[All Fields] OR "educations"[All
Fields])) AND ("radiotherapy"[MeSH Subheading] OR "radiotherapy"[All Fields] OR ("radiation"[All
Fields] AND "therapy"[All Fields]) OR "radiation therapy"[All Fields] OR "radiotherapy"[MeSH Terms]
OR ("radiation"[All Fields] AND "therapy"[All Fields]) OR "radiation therapy"[All Fields])) AND
(2013:2023[pdat])
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Figure 1: Search String.

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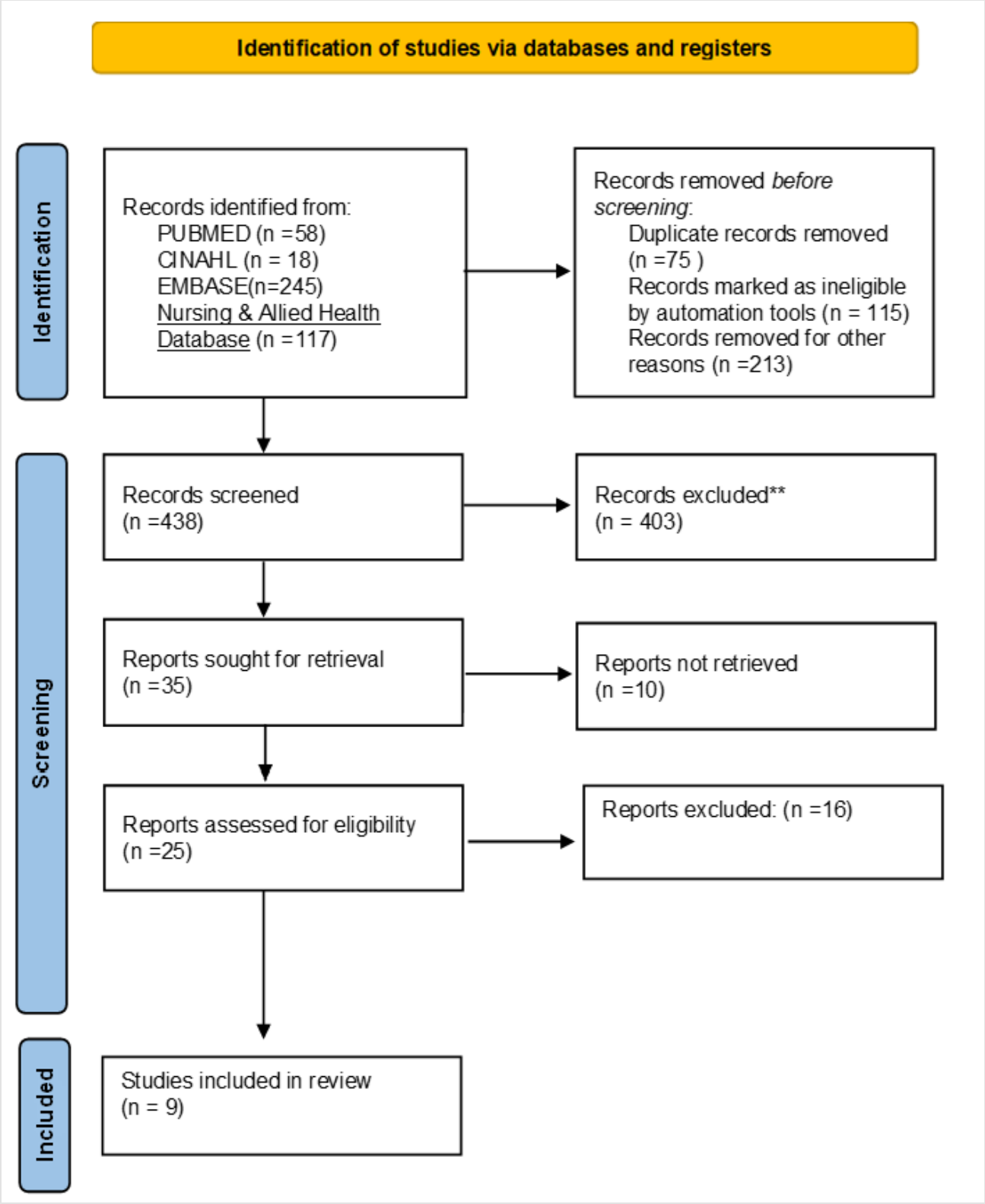

Figure 2: Flow Chart (PRISMA) for the Study Screening Process.

Results

The search strategy in the consulted databases identified 438 studies. After eliminating 75 duplicate records, 363 studies were screened by title and abstract; 403 records were excluded because they were considered irrelevant or not pertinent. A total of 35 full texts were then found and just 9 papers were deemed relevant and therefore included in this scoping review (Table 1). Different types of nursing education programmes were found and investigatedNon si sembra di avere visto criteri di 'rilevanza' o 'pertinenza'. All 9 papers (ègiusto anticipare I risultati?) included in the analysis, five of high quality and four of low quality were extracted and analyzed according to: first author, date of publication, country, design of study, sample, teaching methods, Quantitative/Qualitative methods to assess effect key outputs of studies. Subsequently, each record was analyzed after retrieving the full text. In relation to the theoretical frameworks adopted, the analysis of the quality (scientific and methodological) of the included studies was superseded [5]. The intervention in each study varied. In RCT studies, control groups received standard routine care. Outcomes measured are patient needs, emotional distress, anxiety, depression, patient satisfaction. The tools used to measure these variables differed for each study.

Features of the Included Studies

The included studies published in various international journals were between May 2020 and February 2022 in ten countries: Norway, Iran, Australia, India, Pakistan, Turkey, Canada, Unit States, Egypt. Based on the design of study, four studies were randomized controlled trial (RCT), three were quasi-experimental, two were qualitative, one observational cross-sectional study. Some general features of the included studies were shown in (Table 1). The 55.56% of the studies used a qualitative research design method for evaluation education programme for RT treatment, 4 studies used a quantitative method. The sample size in the included paper ranged from 20 to 367 breast cancer women. The publications investigated the different modalities of support programme for women undergoing RT, including Complementary and Alternative Treatments (CAT) [9], Education skin integrative [10], Swedish massage [11], Psychoeducational Programme (5 studies) [12-16], and information Programme [17]. Study outcomes were measured utilizing interview, focus group, questionnaire, scales, and tests. In this work, we have summarized the interventions that a nurse can propose to patients during radiotherapy treatment. The results of the included studies showed various educational and supportive interventions implemented during the RT for breast cancer patients.

Table 1: General characteristics of the Included Studies.

References	Country Study	Intervention	Type Study	Sample Size	Result
Bredal, et al. (2014) [9]	Norway	Psychoeducational group (PEG) versus support group (SG)	RCT	367	PEG intervention yields benefit s during the difficult period. when patients receive adjuvant chemotherapy or radiotherapy
Laffin, et al. (2015) [10]	Australia	Information Programme	RCT	225	Efficacy of barrier cream due to the high incidence of wet desquamation in patients undergoing radiotherapy.
Darabpour, et al. (2016) (11]	Iran	Swedish massage on mood disorders in breast cancer patients	RCT	100	The Swedish massage showed an improvement in the mood disorders of women with breast Cancer
Rawther, et al. (2016) [12]	India	Nurse Navigator Programme on anxiety, psychological distress and quality of life	RCT	120	Improved adherence to treatment, continuity, and individualized assistance
Zaheer, et al. (2020) [13]	Pakistan	Individualized education FACE -TO- FACE	Quasi-experimental design	61	The intervention resulted in an significant reduction of anxiety
Turan, et al. (2020) [14]	Turkey	Use of Complementary and Alternative Treatments (CAT)	Qualitative study	250	Nurses should be educated and counseled about the safe use of CAT for individuals with chronic illnesses, and nursing history forms should contain questions about the use of CAT.
Lee, et al. (2020) [15]	Canada	Collaboration Programme	Observational, cross-sectional study	130	Empirically support the links among patient-provider collaboration, self-management, and patient outcomes.
Pembroke, et al. (2021) [16]	United States	Educational video	Quasi-experimental design	20	The video intervention demonstrated feasibility, as evidenced by meeting or exceeding benchmarks set for recruitment, retention, and feasibility measured scores
Mohamed, et al. (2022) [17]	Egypt	Programme education skin integrative	Quasi experimental research design	80	Education of patient about skin care measures was more effective in reducing radio dermatitis and pain for breast cancer patient

Discussion

The reported scoping review about educational and supportive interventions for women affected by breast cancer during RT identified 9 studies, revealing a large degree of heterogeneity of interventions and measurement of results. Furthermore, the heterogeneity of both sample size and disease stages created difficulties in the evaluation of the data. Indeed fact, since in the studies the designs and sample size are many, we cannot unify the management of educational and support interventions. However, the analysis of the results led to the identification of positive outcomes for each educational and supportive intervention carried out by the nurses during the RT process for example education to maintain skin integrity; strengthening the nurse-patient relationship; creation of educational videos to accompany patients. Through the analysis of the results, an interaction was identified between the information requested, the individual treatments of each woman and the mechanisms allowing information to be conveyed to specific groups of patients [12-16]. Breast cancer patients treated with RT have an increased risk of experiencing anxiety and depression during treatments, caused by lack of knowledge or understanding of the benefits and side effects of RT, and also have poor knowledge of the technologies used for RT. Women also develop discomfort because RT treatments involve a daily commitment that removes them from their daily routine [17].

The information helps the woman to develop awareness in the decision-making process regarding the treatments to recover her health. Existing research has demonstrated that cancer nursing through education, care and information improves quality of life and care outcomes for these patients [11,10]. Care is based on a relationship of trust, which is helpful in reducing treatment-related stressors, and increasing self-care levels in day-by-day management. In the published studies, there has been a poor evaluation of nursing interventions performed in patient support. Therefore, further research is needed to demonstrate the efficacy and the feasibility of the implemented nursing interventions. The literature analyzed reported excellent results regarding the feasibility of nurse-led and designed interventions, contributing to the development of the oncology nurse role. Patient education interventions must promote a culture of patient empowerment by improving information about cancer, cures, treatments and symptom management. The ultimate goal is to respect the first principle of bioethics, namely the principle of autonomy, which declaims the patient's self-determination.

Conclusion

This scoping review broadly included all current available evidence on the interventions nurses provide to women with breast cancer during RT treatment. Oncology nurses find themselves playing a complex role in different scenarios to allow continuity of care and effective interventions in terms of quality of life. There are a limited number of studies dealing with this type of support in the specific area. Moreover, the interventions carried out are different even if they have the effect of compliance with the treatment and the improvement of the patients' quality of life. Therefore, during RT treatments, the interventions to accompany the patients must be specific and oriented towards the continuity of care and the development of increasingly specific hospital assistance services.

Conflict of Interest Declaration

The authors declare no conflict of interest.

Authors' Contribution

IF and ST contributed to conception, design and data analysis. IF was primarily responsible for acquisition of data and drafting the article. AP, PP and ABDS, CA, revised the article critically for important intellectual content. GS approved the final version to be submitted.

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