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Article

# Impact of Multidisciplinary Care Including Patient Leaders for Breast Cancer Approach in Nicaragua

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**Abstract: Introduction:** Over time, more research has shown that using a multidisciplinary approach helps improve the complex care of cancer patients. It also assessed the usefulness of patient involvement in a leading role that recognizes patients as protagonists within the framework of person- and family-centered care. Peer support groups have been demonstrated to mitigate the psychological impact of breast cancer diagnosis. **Materials and Methods:** A descriptive, retrospective observational study was conducted. The group "Breast Unit" was created, integrating multidisciplinary healthcare teams and incorporating 122 patients who provided feedback to the organization as psychological, emotional, and educational support to women with breast cancer. A total of 93 patients from the support group responded to an interview about their experience. 466 patients over three years were analyzed to assess the impact in early-stage breast cancer detection. **Results:** The multidisciplinary healthcare team improved care workflows and was strengthened at both strategic and operational levels. The response time to patients' concerns was 67% within the first 5 minutes. The PROM indicator for the percentage of early-stage breast cancer improved from 67% to 76%. Patients in the support group reported no diagnosis of depression in the past three years. **Conclusions:** Multidisciplinary work, when combined with patient contributions and peer support, improves care flows, timely treatment, and outcomes for patients. It strengthens the person-centered culture, impacting on a personal and organizational level. They have a key role in education, leadership, and providing feedback to medical teams for quality improvement.

**Keywords:** breast cancer; support groups; multidisciplinary teams; person-centered care

## 1. Introduction

The diagnosis of cancer is tragic and creates a social, emotional, and, of course, physical impact [1,2]. The psychosocial impact includes uncertainty, depression, anxiety, and helplessness in the face of a diagnosis with uncertain progression. [3,4] That has to be taken into consideration to provide integral care for patients.

There have been previous experiences with peer support groups to mitigate the psychological impact of breast cancer diagnosis. In this process, they share experiences and provide mutual support and encouragement to face and overcome difficulties. It can create understanding and a mutual therapeutic and emotional connection; at the same time, it can facilitate an educational and supportive patient-centered journey according to different experiences [5].

Over time, more research has shown that using a multidisciplinary approach helps improve the complex care of cancer patients. The benefits include better adherence to clinical guidelines, improved treatment outcomes, and stronger decision-making processes [6]. Other studies also assessed the

usefulness of patient involvement in multidisciplinary meetings and concluded that it may contribute to the diagnostic process and therapeutic choice, particularly when treatment decisions have a deep impact on their quality of life. [7].

This article evaluates the impact of establishing a "Breast Unit" at Dr. Alejandro Dávila Bolaños Military Teaching Hospital (HMEADB) as a peer support group for patients to promote patient empowerment. It highlights the personal impact of being involved in this group and the role of patients as key participants. Patients work alongside multidisciplinary health teams to educate women in preventive care for early diagnosis and at strategic and operational levels to provide comprehensive care for women with breast cancer.

## 2. Materials and Methods

Dr. Alejandro Dávila Bolaños Military Teaching Hospital (HMEADB) is a tertiary care hospital and a national referral center. It is the facility with the highest number of oncology patients within the Social Security system, with breast cancer representing the leading cause of oncological disease [8].

The Breast Unit was implemented based on the Patient-Centered care framework [9] and experience-based codesign [10]. In healthcare, the term codesign refers to patients and caregivers working in partnership with staff to improve services. In this approach, patients are a fundamental axis in multidisciplinary management.

In the first instance, personal invitations were sent to patients diagnosed with breast cancer, to participate in a virtual peer support group starting June 21, 2022. The patients recruited during the first year of its implementation were included in this intervention.

Patients from the first-time oncology consultation, as well as patients in follow-up consultations, were selected to belong to the "Breast Unit". Patients signed an informed consent form and committed to follow the regulations for virtual participation, which expert patients and medical specialists moderated.

The WhatsApp platform and Zoom were chosen for their ease of use and accessibility for patients, where meetings were coordinated and a space for empowering patients was fostered, allowing them to support one another, encourage each other, and feel better, with more hope and companionship. The strategy included in-person meetings for training, coordination, socialization, and work. Training was provided in areas such as nutrition, psychology, and emotional management so they can support each other, but furthermore, learn to replicate the knowledge.

The Breast Unit also included qualified physicians (Mastologists, Medical and surgical Oncologists, Psychologists, Nutritionists, Physiotherapists, and Plastic Surgeons); they clarified that the group's purpose was to promote acceptance of the disease, clarify doubts and fears, and collaborate with the promotion and education activities.

The patients were explained the roles and responsibilities in which they were free to choose how to contribute, as it extended to activities of personal conversations between patients, calls to support each other. Additionally, they were involved in co-designing plans, infrastructure, and education on virtual platforms; that is, a leading role that recognizes patients as protagonists within the framework of the person- and family-centered care policy [9].

### 2.1. Methodology for Measuring the Impact of the Strategy

Key indicators were established to monitor the impact of the strategy after the multidisciplinary health team was supported by volunteer patients enrolled in the "Breast Unit" during its first 18 months. Regarding empowerment, all activities carried out were reviewed, along with the group's level of organization and their leadership and initiative in different activities. For multidisciplinary collaboration, the efficiency of virtual communication was assessed by analyzing response times to patient inquiries in the virtual chat using the ChatAnalyzer application to evaluate communication

within the group [11]. Additionally, patients' suggestions that were incorporated by doctors were reviewed to evaluate the relevance in the process improvement.

To understand the personal impact that collaboration or belonging to the Breast Unit has had on patients, an online survey was conducted containing questions related to their opinions on the level of support, the usefulness of the group in strengthening knowledge, and coping with situations during difficult times. The survey also inquired about the diagnosis of depression in the last three years. The interview was previously validated to ensure the clarity and appropriateness, then it was sent to the 122 patients from the "Breast Unit", of which 93 randomly agreed to respond to the survey.

As an impact indicator, PROM (Patient-Reported Outcome Measures) [12], the percentage of early breast cancer detection was proposed. For this particular indicator, the 466 patients diagnosed with breast cancer from 2012–2014 were included. Early breast cancer was considered to be those cases diagnosed in the initial stages of the disease—stages 0, I, and IIA—according to the classification by the American Joint Committee on Cancer [13,14].

## 2.2. Ethical Considerations

This study adhered to the Declaration of Helsinki [15] and it was approved by the Ethics Committee for Research at the Military Hospital (code: SCEHM2024–12). All patient data has been processed while respecting anonymity. Participating patients were informed about the use of their interactions in the support group for research purposes, and their informed consent was requested for data collection and analysis.

## 3. Results

A total of 122 patients were successfully recruited during the first 18 months, forming a breast unit for peer support. Additionally, they provided assistance to the healthcare staff in various roles. Most of the participants were in the age groups of 30 to 50 years (36.55%) and 50 to 70 years (52.68%). Seventy-six percent were from the capital, while 24% were from different departments of the country (Table 1).

Approximately 80% of the patients had a university academic level, followed by secondary education (11.8%). Sixty-six percent of the group members received their diagnosis in the last 5 years, followed by 22.6% who were diagnosed between 5 to 10 years ago, and finally, 12% were diagnosed more than 10 years ago (Table 1).

**Table 1.** Characteristics of patients in the breast unit support group.

Variable	Values	Number	Porcentaje (n = 93)
Age	Under 30 years old	8	11.6%
	30 to 50 years old	34	36.6%
	50 to 70 years old	49	52.7%
	Over 70 years old	2	2.1%
Origin	Managua	71	76.3%
	Masaya	12	13%
	Others	10	10.8%
Educational level	University	82	88.2%
	Secondary	11	12%
Years since breast cancer diagnosis	Less than a year	19	20.4%
	1 to 5 years	42	45.2%
	5 to 10 years	21	22.6%
	More than 10 years	11	12%

Source: Survey to members of the "Breast Unit" group.

### 3.1. Patient Empowerment in the Multidisciplinary Team

At the beginning of the strategy, patients played an active role in the design and execution of activities, such as educational talks, relaxation workshops, and participation in leadership meetings. The roles and responsibilities were clearly defined and included joint leadership activities, answering questions to other patients, and developing annual event plans alongside the hospital's multidisciplinary group.

A significant outcome of the initiative was the empowerment of patients, who took the initiative to establish a board of directors among themselves, assuming organizational and managerial responsibilities within the group. This board actively collaborated with the hospital's multidisciplinary team in planning activities and developing intervention strategies.

The board of directors also assigned different roles to the patients based on their skills. These roles included group leaders (patients with more years of diagnosis and treatment experience who served as mentors for new members), talk facilitators (patients trained in specific topics who share information with their peers from a lived-experience perspective in personal meetings and virtual platforms), event coordinators (responsible for organizing and managing special activities, such as events for Breast Cancer Awareness Month), and advocacy voices (group representatives who participated in forums, conferences, and outreach activities both inside and outside the hospital).

The patients collaborated with the hospital leadership group to create annual event plans, quality improvement plans, and to evaluate the strategic and operational annual plan. Other activities included relaxation workshops and religious activities. Inclusive participation was encouraged as the patients came from diverse backgrounds and educational levels.

A key contribution was their role as primary educators, providing in-person counseling at the hospital and virtual support through social media groups and the institution's YouTube channel. One of their most significant contributions was the creation of *The Pink Book: Coloring with Green Hope*, a collective testimony from 11 patients covering 23 support topics for newly diagnosed individuals and their families. Written in simple and accessible language, the book addressed topics such as the importance of nutrition, physical activity, psychological support, and family communication.

The book was released on World Breast Cancer Prevention Day and it was publicized through television, newspapers, and digital platforms, creating a nationwide impact by raising awareness about the disease, highlighting the importance of self-examination and seeking timely medical attention for women. This material was distributed free of charge.

### 3.2. Improvements in Multidisciplinary Work with Patients' Feedback

During multiple meetings with medical teams, patients highlighted the need to optimize waiting times between appointments. In response, the multidisciplinary team implemented immediate notifications for urgent cases and scheduled dedicated meetings to facilitate case discussions. As a result, examination and consultation outcomes were delivered concurrently or in close succession, effectively eliminating the prolonged waiting periods that had existed prior to the adoption of the multidisciplinary approach. This streamlined process significantly reduced delays in diagnosis and treatment.

Additionally, based on insights from these joint sessions, an alert system was introduced in the hospital's electronic records to flag cases diagnosed as BI-RADS 5. This measure served as an additional reminder for all consultants, ensuring a more efficient and expedited care pathway for breast cancer patients.

The implementation of multidisciplinary teamwork in breast cancer care has notably improved response times following diagnosis. As a result, 97% of patients received their first oncology evaluation within 48 hours of histopathological diagnosis, ensuring timely intervention. Furthermore, this care model facilitated the initiation of treatment, whether medical and/or surgical, within the first seven days of the initial consultation in the oncology program.

Another notable outcome following the implementation of educational strategies, supported by patients from the Breast Unit, was the improvement in early breast cancer detection rates. In 2022,

the year the Breast Unit was established, the detection rate was 67%. This figure subsequently increased to 76% in both years 2023 and 2024 (Table 4).

### 3.3. The Personal Impact of Being Part of the Breast Unit

To assess communication within the WhatsApp group, it was found that 83% of patient inquiries received a response within the first five minutes, while the remaining 17% were answered within five to ten minutes. The multidisciplinary team consistently moderated these interactions to ensure the accuracy and quality of the information provided (Table 3).

When asked about the personal impact of participating in and collaborating within the group, 87% of patients reported feeling highly supported, and 99% found peer-to-peer advice beneficial for their healthcare. Additionally, 91.4% stated that their knowledge had been strengthened through the group, while 80.6% expressed that it provided significant support in coping with difficult moments (Table 2).

**Table 2.** Personal impact of belonging to the support group: "Breast Unit".

Variable	Values	Numbers	Percentage ( <i>n</i> = 93)
Degree of support among patients in the virtual group	None	2	2.1%
	Little	3	3.2%
	Moderate	7	7.5%
	<b>Very much</b>	<b>81</b>	<b>87.1%</b>
Usefulness of advice among patients regarding health care	<b>Very useful</b>	<b>92</b>	<b>98.1%</b>
	Not useful	1	1.1%
Strengthening of knowledge about breast cancer	<b>Yes</b>	<b>85</b>	<b>91.4%</b>
	No	8	8.6%
Degree of support to face difficult moments	None	3	3.2%
	Little	15	16.1%
	<b>Very much</b>	<b>75</b>	<b>80.6%</b>
Diagnosis of depression in the last 3 years	Yes	0	0%
	<b>No</b>	<b>93</b>	<b>100%</b>

Source: Survey of members of the group "Breast Unit".

**Table 3.** Response Time in Chat.

Time	Year 2022	Year 2023	Year 2024
Less than a minute	16%	14%	16%
From 1 to 5 minutes	46%	59%	67%
From 5 to 15 minutes	38%	27%	17%

Source: Chat analyzer based on a WhatsApp group.

**Table 4.** Early Cancer Detection in relation to Total Diagnosed Cases.

Years	Cases	Early cancer detection	Percentage
2022	92	62	67%
2023	186	141	76%
2024	188	143	76%
<b>Total</b>	<b>466</b>	<b>346</b>	<b>-</b>

Source: Clinical records of patients diagnosed with breast cancer at HMADB.

**Table 4.** Patient Health Questionnaire PHQ-9 in Support Group Patients.

Score	Classification	Number ( <i>n</i> = 93)	Percentage ( <i>n</i> = 93)
0–4	None	43	46%
5–9	Mild	42	45%
10–14	Moderate	4	4%
15–19	Moderately severe	3	3%

Score	Classification	Number ( <i>n</i> = 93)	Percentage ( <i>n</i> = 93)
20–27	Severe	2	2%

Source: Survey of members of the *Breast Unit HMEADB* group.

## 4. Discussion

Breast cancer is a global public health concern that necessitates a multidisciplinary and effective approach. In Latin America, it primarily affects women under the age of 50 [16]. In Nicaragua, breast cancer has ranked as the second leading cause of cancer-related mortality over the past three years [17].

In the present study, cases were identified in patients under 30 years old. Previous research has emphasized the need for targeted educational strategies to reach this demographic group, actively promoting breast self-examination as a preventive measure [18].

### 4.1. Multidisciplinary Approach with Patient Feedback

In breast cancer care, multiple specialties must collaborate, as working in isolation can lead to delays, late diagnoses, and postponed treatments. This multidisciplinary team—comprising Mastologists, oncologists, psychologists, nutritionists, physiotherapists, and plastic surgeons—implemented a coordinated approach to ensure that BI-RADS 5 diagnoses received immediate attention within the first 24 hours by placing an alert in the hospital's electronic system. This level of coordination enables a comprehensive, person-centered approach to addressing all patient needs [19].

The strengthening of multidisciplinary collaboration ensured that once a diagnosis was confirmed, patients were admitted to treatment within 48 hours after completing the necessary administrative procedures. This practice reinforces teamwork and has been internationally recognized as the "gold standard" in cancer treatment [20,21].

The multidisciplinary team also incorporated patient contributions from the Breast Unit, actively involving them in both strategic and operational activities while providing comprehensive social support to help mitigate stress. Various studies have demonstrated that patient-led support groups offer significant psychosocial benefits, positively impacting women's well-being, a finding consistent with the results of this study [4].

Early detection and timely access to effective treatment remain significant challenges in resource-limited settings [16] where psychological and sociocultural barriers often hinder early diagnosis. In this study, the improvement in early breast cancer detection from 67% to 76% serves as an encouraging indicator, reflecting the impact of multidisciplinary coordination and education in narrowing these gaps [22].

### 4.2. Patient Empowerment

The members of the Breast Unit became powerful and empowered educators. Previous studies in Nicaragua have evidenced the need for greater awareness and education for women regarding the importance of breast self-examination to ensure the identification of breast abnormalities at an earlier stage [18]. Once there is a diagnosis, the need for information and support will change throughout the experience with the disease; educating patients and their families for a better understanding contributes to exploring ways to manage the disease more effectively [23].

Advisory patients actively participated in the design, planning, and execution of strategic activities within the organization, consolidating the concept that they are part of the health teams and can co-design value-based strategies and processes to address the disease [24]. This empowerment, a sense of community, and a close connection between their experiences contribute to healthcare services in establishing subsequent improvement priorities, especially in complex diseases like cancer [25].

### 4.3. Personal Impact on Participants

Peer support in cancer care enhances patients' quality of life by fostering mutual support, reducing distress, and promoting adherence to treatment. Previous studies also highlight the importance of emphasizing participant empowerment and shared decision-making. In this regard, a key role of peer support, as demonstrated in this study, is to empower patients in decision-making and enhance their self-regulation and coping mechanisms, as referenced in the literature [4].

Furthermore, the experiences of patients involved in breast units were characterized by high levels of satisfaction. They reported feeling heard, valued, and supported, with strengthened knowledge that contributed to their sense of usefulness and well-being during difficult times. Notably, this may have influenced their responses, as none reported experiencing symptoms of depression within this group over the past three years since their diagnosis.

Despite advancements in medical science and technology, cancer diagnoses remain closely associated with suffering, pain, and mortality. Current research and clinical practice indicate that nearly half of cancer patients develop psychiatric or psychological disorders requiring appropriate diagnosis and management [26].

However, among the participants in this study, such symptoms were not observed, likely due to the robust support system in place. This finding is particularly encouraging, as existing studies suggest that strong support networks may positively impact clinical outcomes and survival rates, although further research is needed to substantiate these effects [27].

## 5. Conclusions

Multidisciplinary collaboration, when coupled with patient contributions, enhances care processes, ensures timely treatment, and improves patient outcomes. It reinforces a person-centered culture, creating a positive impact both personally and organizationally. Being part of a support group with other women facing the same condition, alongside receiving recognition from healthcare professionals and hospital authorities, had a profound positive effect on the participants at a personal level.

Peer support groups can also be empowered to contribute strategically and operationally. They play a vital role in education, leadership, and providing valuable feedback to medical teams, which is essential for quality improvement.

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