

Impact of breast cancer on sexuality and psycho-physical wellbeing: Survey analysis

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ABSTRACT

Background: The diagnosis and treatment of breast cancer (BC) can significantly impact patients' sexual and psycho-physical wellbeing. Awareness and preparedness among healthcare professionals are essential to address these issues effectively.

Methods: Between March and April 2024, a nationwide survey was conducted in Italy among 109 healthcare professionals (including oncologists and gynecologists) to assess their knowledge, training, and clinical practices related to the impact of BC on sexuality and psycho-physical health.

Findings: Most respondents were oncologists (59%), followed by gynecologists (26%) and psychologists (13%), with the majority aged between 35 and 59 years. Overall, 56% considered themselves "fairly informed," while only 23% felt "very informed" and 21% "poorly informed." Specific training in this field had been received by only 30% of respondents. Among oncologists, just 17% reported being "very informed." Despite this, nearly all agreed that dedicated training is essential for optimal BC management.

Only 16% of participants routinely addressed sexuality-related concerns with patients, while 38% rarely did so. Reported barriers included patient reluctance and embarrassment, limited consultation time, and lack of access to specialized centers. Half of the respondents reported multidisciplinary collaboration in managing sexual health issues, though only 32% had access to dedicated gynecological services. Pharmacological approaches were rarely used; counseling was the primary intervention, sometimes complemented by techniques such as acupuncture and cognitive behavioral therapy. While 76% had access to psychological services, all participants recognized their importance in addressing patients' sexual health.

Conclusion: The findings highlight the urgent need for targeted training and improved multidisciplinary access to address the sexual and psycho-physical needs of breast cancer patients. Institutional commitment and systemic changes are essential to ensure comprehensive and patient-centered care.

1. Introduction

Breast cancer is the most prevalent malignancy among women worldwide [1]. Although there has been improvement in breast cancer

diagnosis and treatments, the impact on patients' quality of life remains a crucial issue [2]. Breast cancer survivors experience many challenges in treatment-related side effects, among them, sexual dysfunction is a distressing and under-addressed issue, especially in young women [3].

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Sexual health, as defined by the World Health Organization, includes physical, emotional, mental, and social well-being concerning sexuality, extending beyond the mere absence of disease. Disturbances in sexual health can have profound effects on psychological well-being, self-image, relationships, and overall quality of life [4].

Indeed, sexual function is influenced by a complex interplay of biological, psychological, and sociocultural factors, all of which can be significantly affected by a diagnosis of breast cancer and related treatments [5].

Major international oncology societies—including the American Society of Clinical Oncology (ASCO), the National Comprehensive Cancer Network (NCCN), the European Society for Medical Oncology (ESMO), the German Gynecological Oncology Group (AGO), and the St. Gallen International Breast Cancer Conference consensus panel—consistently recognize sexual health as a critical component of survivorship care and quality of life [6].

Across guidelines, there is strong agreement on the need for proactive assessment. Clinicians are encouraged to routinely screen for sexual concerns using open-ended questions and validated patient-reported outcome tools, as sexual symptoms are often underreported unless specifically addressed. Multidisciplinary management—including oncologists, gynecologists, psycho-oncologists, pelvic floor specialists, and sexual health counselors—is uniformly recommended [6]. A stepwise therapeutic approach is consistently endorsed.

Several studies indicate that up to 75% of breast cancer patients report temporary or permanent sexual concerns, including decreased libido, sexual pain, and relationship difficulties [7–9]. Other authors reported that approximately half of breast cancer survivors experience sexual dysfunction, with a notable percentage reporting dyspareunia and hypoactive sexual desire disorder. Certainly, these issues are exacerbated by treatments used for breast cancer, such as endocrine therapy, chemotherapy, and surgical interventions, which can induce early menopause, hormonal imbalances, fatigue, and body image disturbances [10,11]. Systemic treatments such as chemotherapy and endocrine therapy have been particularly associated with long-term sexual health problems [12]. Moreover, among breast cancer survivors, pre-existing sexual difficulties, age, psychological distress, and, as aforementioned, multimodal treatments can contribute to sexual dysfunction [3,13]. In addition, anxiety and depression often co-occur with sexual dysfunction, creating a vicious cycle that negatively affects patients' mental and emotional health. In particular, studies have shown a strong correlation between anxiety and vaginal sexual health problems in postmenopausal breast cancer survivors who are receiving aromatase inhibitors (AI) as adjuvant therapy [10].

Despite the prevalence and impact of these issues, sexual health concerns in patients diagnosed with breast cancer remain largely unaddressed by healthcare professionals [14,15]. Published surveys have indicated that even though a majority of patients report that cancer treatments affect their sexual function, only a minority are formally asked about these concerns by their medical teams [16]. The disparity is even more pronounced between genders, with female cancer patients being significantly less likely than male patients to receive counseling on sexual health [17]. This gap is partly attributed to a lack of training among healthcare professionals, who often feel unprepared to discuss sexual health or provide effective solutions.

Beyond individual communication barriers, systemic factors further discourage the integration of sexual health support into oncological care. Limited resources, patient hesitation, and sociocultural stigma contribute to the mistreatment of sexual health discussions in routine cancer visits [18–21]. As a result, many patients struggle with unresolved sexual health issues without access to appropriate support services.

The approach to sexual health in cancer care is significantly influenced by cultural factors, which vary considerably across different regions of Italy and Europe. Cultural norms regarding sexuality discussions in healthcare settings can create additional barriers to

addressing these concerns, leading to geographic disparities in the quality of care provided to breast cancer survivors [22,23].

These cultural differences may manifest in both healthcare professionals' willingness to initiate conversations about sexuality and patients' comfort in expressing their concerns.

Given the limited attention to sexual health issues in the oncological care pathway and the perception of inadequate support reported by patients, we conducted this survey. This study uniquely contributes to the existing literature by specifically exploring Italian healthcare professionals' awareness and training regarding these side effects, as well as the availability and perceived importance of psychological support services in the Italian healthcare system. Unlike previous research that has primarily focused on patient experiences, our survey examines the perspectives of healthcare providers across different specialties, offering valuable insights into the systemic barriers that may impede comprehensive care for breast cancer survivors in Italy.

2. Methods

The online and anonymous survey collected information on the impact of breast cancer on sexuality and psycho-physical well-being. The questions were created by oncologists, psychologists, and gynaecologists working in an IRCSS cancer centre. Expert review prior to dissemination was performed and the newsletter and website of a breast cancer team advertised the survey. Moreover, it was presented at breast cancer multidisciplinary meetings in several hospitals or by email. Due to this dissemination method, the estimated response rate could not be calculated.

109 professionals were recruited across Italy, duplicate responses were technically prevented by IP restriction and no monetary incentives were provided.

Via 12 questions, of which 10 were closed-ended, this study examined the experience and awareness of the effects of breast cancer on sexuality. The questions addressed the problems and limits of sexual health concerns encountered in clinical practice and reported or described in previous publications [24,25].

Ethics committee approval was obtained in accordance with institutional regulations. Participants provided their informed consent and included oncologists, gynaecologists, and psychologists between March and April 2024.

3. Data analysis

Data were analysed with descriptive statistics for average and median rates using Excel. Data visualization was performed with the open-source software LabPlot2 (<https://labplot.kde.org/>).

4. Results

4.1. Participants

The survey collected 109 responses. The majority of respondents were oncologists (59%), followed by gynaecologists (26%) and psychologists (13%). The predominant age distribution was between 46 and 60 years (42%) and 36–45 years old (27%). A greater proportion of younger physicians reported receiving specific training on the topic: 33% (4/12) in the 25–35 age group and 41% (12/29) in the 36–45 group, compared with 28% (13/46) in the 46–60 group and only 18% (4/22) of those over 60 (Table 1).

Among the younger respondents, only two physicians (17%) considered themselves very informed, and both had received specific training. In the 46–60 age group, seven of the 29 physicians who felt very informed reported always discussing sexuality in detail with patients, though three of them had not received any specific training.

Among younger respondents, 58% reported being fairly informed. Of these, 42% discussed the issue often or occasionally, while 17% never

Table 1

Distribution of respondents by specialization, age group, and participation in specific training. The table reports the distribution of participants according to specialization and age range, together with the proportion who declared previous training on the topic. Data are expressed as absolute numbers and percentages calculated within each specialty group.

Specialization	Age range	Total Respondents n (%)	Training Yes n (%)	Training No n (%)
Gynecology (n=28)	>60	10 (36)	3 (11)	7 (25)
	46–60	14 (50)	3 (11)	11 (39)
	36–45	3 (11)	3 (11)	0
	25–35	1 (3)	1 (3)	0
Oncology (n=64)	>60	10 (16)	0 (0)	10 (16)
	46–60	26 (41)	7 (11)	19 (30)
	36–45	20 (31)	6 (9)	14 (22)
	25–35	8 (12)	3 (5)	5 (8)
Psychology (n=14)	>60	2 (14)	1 (7)	1 (7)
	46–60	4 (29)	2 (14)	2 (14)
	36–45	5 (36)	3 (21)	2 (14)
	25–35	3 (21)	0 (0)	3 (21)
Nurse (n=1)	46–60	1 (100)	0 (0)	1 (100)
Pharmacist (n=1)	36–45	1 (100)	0 (0)	1 (100)
Other: Oncoplastic – Oncoreconstructive Breast Surgery (n=1)	46–60	1 (100)	1 (100)	0 (0)

addressed it. In the over 60 group, 64% considered themselves were fairly informed; among them, 79% mentioned the topic only briefly during visits, while 21% addressed it in greater detail.

Referral practices to specialists for sexuality-related concerns varied by age group: 33% of the younger physicians, 17% of those aged 36–45, 22% of those 46–60, and only 9% of those over 60 recommended specialist consultations.

4.2. Level of information

56% of participants reported being "fairly informed" about the impact of breast cancer on sexuality and psycho-physical wellbeing; 21% considered themselves "poorly informed", and 23% "very informed". Among the fairly informed, the majority were oncologists (62%), followed by gynecologists (25%), psychologists (11%), and pharmacists (2%).

One quarter of the fairly informed group (40% oncologists, 40% gynaecologists, 20% psychologists) had received specific training. However, only 19% (11 individuals) regularly discussed sexuality issues

with patients, while 35% addressed the issue rarely, and 46% reported doing so often. Interestingly, despite self-identifying as fairly informed, 11 of the these 61 professionals still referred patients to specialists, while 16 reported discussing sexuality in detail during clinical visits.

The main barrier reported by half of the fairly informed professionals was patients' embarrassment or reluctance to engage on the topic. For three oncologists, lack of time during visits was the key obstacle; for two others, it was managing patients' pregnancy-related concerns.

Only 17% of oncologists considered themselves very informed, while a quarter of gynecologists identified as either poorly or very informed (Fig. 1). Among professional, in the "poorly informed" group – most of whom had no training – 76% stated that they rarely discussed sexuality with patients.

4.3. Specific training

Only 30% of respondents reported having received specific training on the impact of breast cancer and its treatment on sexuality. Among those trained, oncologists made up the largest group (48%), followed by gynaecologists (30%). Notably, 75% of oncologists stated they had not received specific training on this subject (Fig. 2). Despite this, nearly all participants, except for one oncologist aged over 60, agreed that training in this area is essential to improve patient management.

4.4. Addressing sexuality issues

Only 16% of respondents reported always discussing sexuality-related issues with breast cancer patients during clinical activities, while 38% stated they rarely addressed the topic. The most common challenges cited were patients' embarrassment, discomfort, and reluctance to engage in these discussions. Additional barriers included the difficulty in locating specialized referral centers, long wait times, and limited consultation time in oncology settings.

19% of participants referred patients to gynecologists specialized in sexual dysfunction related to breast cancer and its treatments. A similar proportion (13%) – including eight oncologists, five gynecologists, and two professionals from other disciplines - reported that they rarely or never addressed these issues (Fig. 3). Among oncologists, 36% perceived the impact of oncological treatments on patients' sexual health as very negative, while 59% considered it moderately negative. Gynecologists were evenly divided in their assessments, while two psychologists reported a neutral stance. Most professionals (86%) agreed that patient age significantly affects the ability to address sexuality-related topics, whereas fewer than 2% believed that age had no influence.

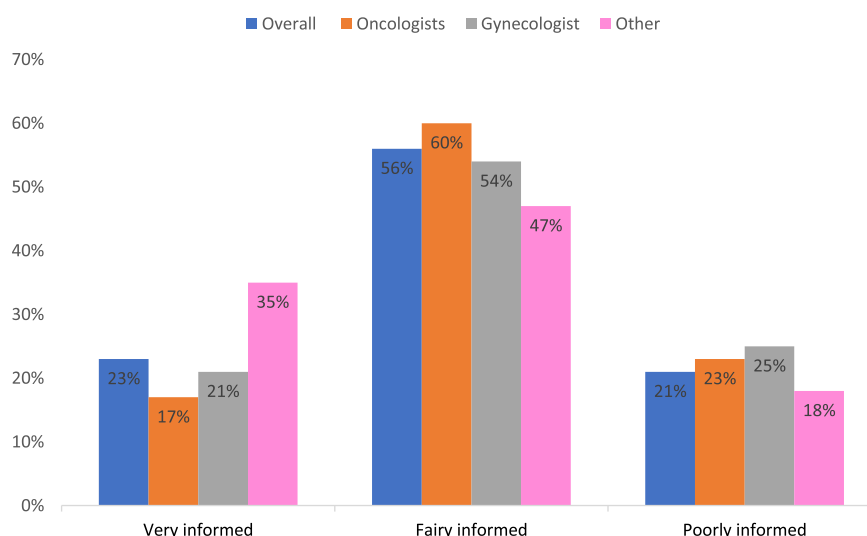


Fig. 1. Answers of healthcare professionals (overall and divided by specialties) about the level of information.

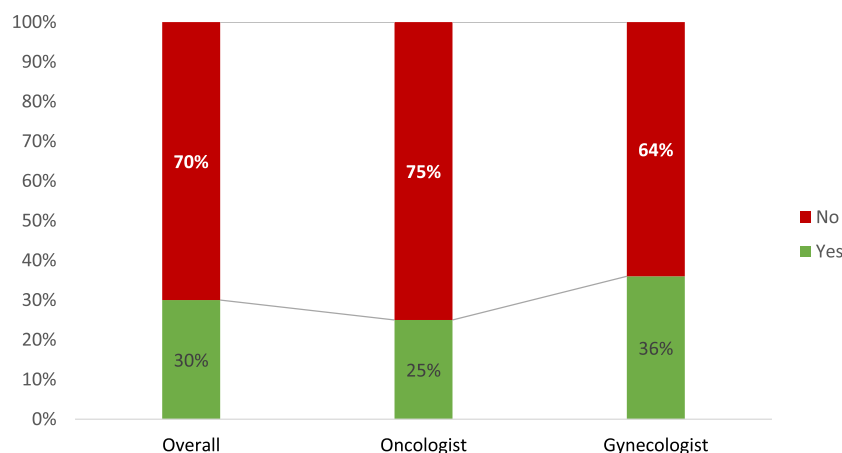


Fig. 2. Specific training on sexuality-issues related to breast cancer diagnosis and treatment received by oncologists, gynecologist or overall.

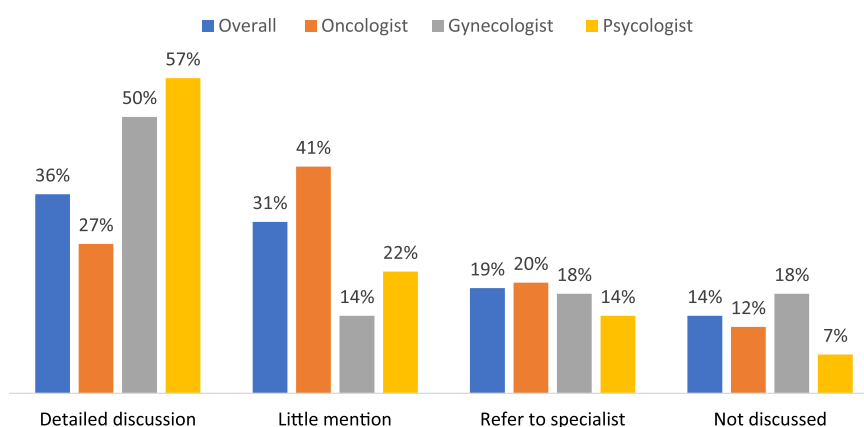


Fig. 3. Approaches used to address sexuality related problems with breast cancer patient reported by healthcare professionals (overall and divided by specialties).

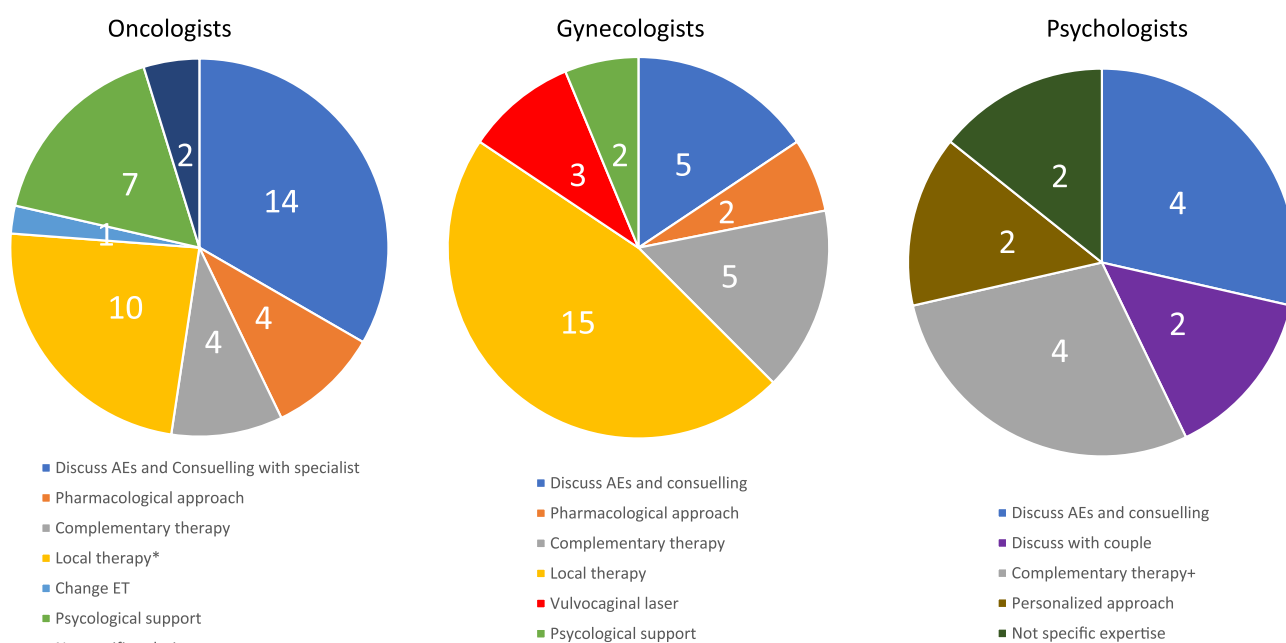


Fig. 4. Strategies used to manage the sexual side effects of oncological treatments reported by oncologists, gynecologists and psychologists. Multiple answers could be reported from each participant. The numbers within the circle indicates the number (not the percentage) of responders. * Lubricants, Ointments and gels. + Relaxation techniques, Psychotherapy, Cognitive-behavioral techniques (CBT).

4.5. Interventions for the management of sexuality changes

Half of the participants reported frequent collaboration with other specialists – such as gynecologists, psychologists, and sexologists – in managing sexuality-related concerns in breast cancer patients. In contrast, 29% rarely used a multidisciplinary approach, and 9% reported never doing so. Only 32% of respondents stated that their institutions had access to a specialized gynecological team dedicated to managing the sexual side effects of oncological treatments.

Pharmacological interventions were rarely used: only four oncologists reported prescribing medications for managing sexual dysfunction. The majority of professionals relied on counseling strategies. Some participants (five in total) also employed complementary therapies, including acupuncture and cognitive-behavioral techniques (CBT) (Fig. 4).

4.6. Psychological support

All respondents acknowledged the critical importance of psychological oncology services in addressing sexual health problems. Specifically, 79% considered psychological support extremely important for both patients and their partners, while 21% described it as important. Psychological oncology services were available at 76% of the respondents' institutions, while 24% reported a lack of such services and only 32% had specialized gynecological team. All healthcare professionals working in institutions with available psychological oncology services reported to manage sexual dysfunction with specific counseling and referring to phyco-oncologist or specialized gynecologists.

5. Discussion

The diagnosis and treatment of breast cancer can profoundly impact women's sexual health and psycho-physical wellbeing, with effects that vary by age, menopausal status, psychological condition, and treatment modality [2,22,23,26].

Our findings confirm and expand upon existing evidence indicating that sexuality is still insufficiently integrated into breast cancer care and highlight significant unmet needs from the perspective of healthcare professionals.

Although most respondents acknowledged the relevance of these issues, the gap between perceived importance and clinical implementation remains substantial. The perception of the negative effects of cancer therapies is correlated with the extent of training received and with regular discussion of the topic.

Fewer than 20% of professionals routinely address sexuality-related concerns in their practice, and only 30% have received formal training. These findings echo prior studies showing that lack of preparation, time constraints, and cultural taboos are common barriers preventing healthcare professionals from initiating discussions about sexual health with their patients [27–29].

Medical education rarely includes dedicated training on addressing sexuality in cancer patients, leading to a reluctance among medical teams to initiate conversations on the topic. In Italy, dedicated in person or online courses or workshop or preceptorship on sexual wellbeing and oncologic care are occasionally offered by Italian institutions and scientific bodies. Some Italian cancer centers and professional groups are beginning to incorporate sexual health topics into national oncology education and professional development programs within broader training on patient-centered care, communication, and survivorship. Post-graduate training opportunities in sexual health and sexology (including master's level courses in nursing sexology), can be pursued by nurses interested in specializing further.

Consistently, in our survey only 30% of participants reported having received specific training on this issue. Whether this reflects a lack of available programs or limited access remains uncertain. However, the fact that all but one respondent, recognized the need for training

highlights a shared awareness of the importance of this topic and a persisting unmet educational need in clinical practice. Notably, even among those who considered themselves “fairly informed,” the actual frequency of patient engagement on these topics was low. The findings highlight a gap between perceived knowledge and clinical practice: although many professionals considered themselves fairly or very informed, only a minority discussed sexuality with patients on a regular basis. This suggests that information alone may not be sufficient to overcome existing barriers and it must be complemented by communication skills, institutional support, and confidence in managing these issues.

Remarkably, psychologists—though a small subgroup—seem more inclined to address these issues, possibly due to their specific training. This points to the value of integrating psychological expertise into multidisciplinary care to better support discussions on sexual health.

A generational gradient emerged clearly: younger professionals were more likely to report both having received specific training and discussing sexual health more frequently in clinical settings. This suggests that sexual health education has only recently been incorporated into training curricula. The implication is twofold: ongoing continuing education is needed for senior professionals, and existing efforts should be expanded and standardized across disciplines.

Another critical issue is the limited availability of multidisciplinary services. While half of respondents reported collaborating with other specialists, access to structured, dedicated psycho-sexual and gynecological services remains uneven. Only 32% reported availability of specialized gynecological teams, while 76% had access to psychological support. This imbalance may contribute to a fragmented management of sexuality-related issues and underscores the need for truly multidisciplinary models. Indeed, a holistic approach to survivorship care should include integrated gynecological, psychological, and sexual health expertise, according to international guidelines [30–33].

Moreover, pharmacological interventions were rarely used, reported by only four oncologists. This underutilization may reflect uncertainty about indications or lack of confidence, but it also highlights a missed opportunity for effective symptom management. Similarly, complementary approaches such as acupuncture and CBT, though mentioned by a minority of respondents, remain underexplored despite demonstrated efficacy in some studies. Institutional and cultural contexts may further influence care delivery. The survey revealed regional disparities: respondents from northern Italy reported higher rates of addressing sexuality in consultations compared to those in central and southern regions. These differences may reflect variations in institutional priorities, resource allocation, or sociocultural norms regarding sexuality, as previously described in the literature.

The broad consensus on the importance of psychological support—recognized as “extremely important” by 79% of respondents—demonstrates growing awareness of the emotional dimensions of sexual health extremely related [23,25,33,34]. Nevertheless, the lack of integration between psychological, gynecological, and oncological services remains a significant structural limitation. Addressing this gap requires rethinking organizational models and creating more inclusive, patient-centered care pathways.

This study has limitations. The results are based on self-reported data, which may be subject to recall or social desirability bias. The cross-sectional design also prevents causal inference. Furthermore, the survey has no formal validation and focuses exclusively on the perspective of healthcare professionals, mostly oncologists that can represent a potential source of perspective imbalance, not including the voices of patients—who are the ultimate stakeholders in survivorship care. Future research should incorporate patient-reported outcomes and explore how these professional perceptions align with patient needs and experiences.

In light of these findings, we advocate for a comprehensive strategy to address sexual health in breast cancer care. This includes embedding sexual health modules into continuing medical education programs,

organizing interdisciplinary workshops or MDT training, and formalizing referral pathways to psycho-sexual and gynecological services. National societies and institutions should lead efforts to establish clear standards of care and performance indicators, ensuring equity and consistency across regions and institutions.

Specifically, oncology departments could develop mandatory educational modules on sexual health communication, integrating brief screening tools and role-play-based simulations into continuing medical education for medical oncologists, radiation oncologists, psychologists and oncology nurses. Interdisciplinary workshops co-led by gynecologists, psycho-oncologists, and pelvic floor specialists could provide case-based training on the management of sexual discomfort in patients receiving endocrine therapy, including shared decision-making around local hormonal treatments. The incorporation of sexual health competencies into fellowship curricula, with defined learning objectives and assessment metrics, would ensure that early-career oncologists acquire practical skills in counseling, risk discussion, and referral coordination.

At the systems level, cancer centers could embed standardized sexual health screening questions within electronic medical records at predefined time points (e.g., initiation of endocrine therapy, annual survivorship visits), with automated referral triggers for moderate-to-severe symptoms. In addition, institutions could formalize multidisciplinary survivorship pathways that include predefined access to gynecology, pelvic floor rehabilitation, and psycho-sexual counseling services. Survivorship care plans could incorporate written, evidence-based information on first-line strategies, criteria for escalation to local hormonal therapies, and clear documentation templates for shared decision-making, thereby aligning individual care with international guideline standards while ensuring medico-legal clarity.

Empirical experience with structured educational interventions addressing sexual health in breast cancer care, although currently limited, demonstrates feasibility and positive clinician outcomes when embedded within multidisciplinary oncology settings [34–37]. A seminal example is the improving Sexual Health and Augmenting Relationships through Education (iSHARE) intervention, a brief communication skills training designed for breast cancer clinicians. This program was found to be feasible to implement, well received by participants, and associated with increases in clinicians' self-efficacy and positive outcome expectancies for discussing sexual health concerns in routine practice [34].

Finally, a prospective follow-up of this initiative—possibly including longitudinal assessment and patient-facing surveys—would provide deeper insight into how training and service models translate into improved clinical practice and patient outcomes.

6. Conclusions

This survey underscores the need for broader, structured, and more specific training for healthcare professionals regarding the sexual and psycho-physical consequences of breast cancer and its treatments. While most professionals recognize the importance of these issues, a significant gap remains in their routine clinical management.

Expanding access to multidisciplinary support services—particularly specialized gynecological and psychological care—emerges as a critical priority to ensure comprehensive survivorship care. These measures, aligned with international guidelines and supported by our findings, could substantially improve the quality of life for breast cancer patients by better addressing their physical, emotional, and sexual wellbeing.

A cultural and organizational shift is needed to bridge the current disconnect between awareness and implementation. Future initiatives should prioritize education, service integration, and the development of standardized communication pathways tailored to diverse patient needs.

CRedit authorship contribution statement

Paola Zagami: Writing – review & editing, Writing – original draft, Visualization, Formal analysis, Data curation, Conceptualization. **Beatrice Taurelli Salimbeni:** Writing – review & editing, Writing – original draft, Investigation, Formal analysis, Data curation, Conceptualization. **Eleonora Petra Preti:** Writing – review & editing, Visualization, Validation, Data curation. **Angela Esposito:** Writing – review & editing, Visualization, Validation. **Antonio Marra:** Writing – review & editing, Visualization, Validation. **Dario Trapani:** Writing – review & editing, Visualization, Validation. **Elisabetta Munzone:** Writing – review & editing, Visualization, Validation. **Manuelita Mazza:** Writing – review & editing, Visualization, Validation. **Silvia Martella:** Writing – review & editing, Visualization, Validation. **Ilaria Durosini:** Writing – review & editing, Visualization, Validation. **Serena Perazzo:** Writing – review & editing, Validation. **Renato Marsicano:** Writing – review & editing, Visualization. **Pier Paolo Maria Berton Giachetti:** Writing – review & editing, Visualization, Validation. **Giuseppe Curigliano:** Writing – review & editing, Visualization, Validation, Supervision. **Carmen Criscitiello:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Methodology, Formal analysis, Data curation, Conceptualization. **Gabriella Pravettoni:** Writing – review & editing, Visualization, Validation, Supervision, Data curation, Conceptualization.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Carmen Criscitiello reports a relationship with Pfizer, Novartis, Lilly, Roche, MSD, Seagen, Gilead, AstraZeneca, Daiichi Sankyo. that includes: consulting or advisory. Giuseppe Curigliano reports a relationship with Bristol Myers Squibb, Eli Lilly, Foundation Medicine, Gilead, Merck, Novartis, Pfizer, Roche, Ellipses Pharma and Seagen that includes: consulting or advisory, speaking and lecture fees, and travel reimbursement. Given her role as < Specialty Editor>, <GABRIELLA PRAVETTONI> had no involvement in the peer review of this article and had no access to information regarding its peer review. Full responsibility for the editorial process for this article was delegated to another journal editor. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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