

Clinical, Pathological, and Psychosocial Factors Influencing Patient Preference for Contralateral Prophylactic Mastectomy in Patients with Unilateral Breast Cancer

Tek Taraflı Meme Kanseri Hastalarında Kontrlaterale Profilaktik Mastektomi Tercihini Etkileyen Klinik, Patolojik ve Psikososyal Faktörler

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Abstract

Objectives: Prophylactic mastectomy is an effective surgical option for reducing breast cancer risk, particularly in high-risk patients. However, the decision-making process is multifactorial and extends beyond oncologic risk alone. The aim of this study was to evaluate demographic, clinicopathological, and decision-making-related factors associated with documented patient preference among those who underwent contralateral prophylactic mastectomy for unilateral breast cancer.

Material and Methods: In this single-center retrospective observational study, 66 patients who underwent contralateral prophylactic mastectomy for breast cancer between January 2015 and January 2025 were included. Demographic and reproductive characteristics, tumor- and treatment-related variables, and decision-making parameters, including family history, genetic diagnosis, psychological fear, follow-up difficulties, aesthetic concerns, physician recommendation, and patient preference, were analyzed. The primary dependent variable was whether patient preference influenced the decision to undergo prophylactic mastectomy.

Results: Of the 66 patients, 41 (62.1%) had a documented preference for prophylactic mastectomy. Compared with those without a patient preference, this group was significantly younger and had a higher proportion of married patients. Rates of neoadjuvant systemic therapy, distant metastasis, and advanced clinical T and N stages were also higher. Family history of breast cancer, family history of other cancers, and the presence of a genetic diagnosis were strongly associated with patient preference. Fear was significantly more common in the patient preference group. No significant differences were observed in multifocality, molecular subtype, or physician recommendation, although borderline significance was noted for follow-up difficulties and aesthetic concerns. Univariable logistic regression showed that younger age, marital status, neoadjuvant therapy, psychological fear, and advanced clinical T/N stage were associated with patient preference.

Conclusion: Patient preference for prophylactic mastectomy appears to be influenced by multiple factors, including younger age, familial/genetic risk indicators, disease burden, and psychosocial factors. These findings support the importance of structured counseling and shared decision-making tailored to individual patient characteristics.

Keywords: Prophylactic mastectomy, breast neoplasms, genetic predisposition to disease, anxiety



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Öz

Giriş / Amaç: Profilaktik mastektomi, özellikle yüksek riskli hastalarda meme kanseri riskini azaltmada etkili bir cerrahi seçenektir. Ancak karar verme süreci çok faktörlüdür ve yalnızca onkolojik risk ile sınırlı değildir. Bu çalışmanın amacı, tek taraflı meme kanseri nedeniyle kontralateral profilaktik mastektomi uygulanan hastalarda dokümanede edilmiş hasta tercihi ile ilişkili demografik, klinikopatolojik ve karar verme sürecine ilişkin faktörleri değerlendirmektir.

Gereç ve Yöntem: Bu tek merkezli, retrospektif gözlemsel çalışmaya, Ocak 2015-Ocak 2025 tarihleri arasında meme kanseri tanısıyla kontralateral profilaktik mastektomi uygulanan 66 hasta dahil edildi. Demografik ve reproduktif özellikler, tümör ve tedaviye ilişkin değişkenler ile aile öyküsü, genetik tanı, psikolojik korku, takip sürecine ilişkin güçlükler, estetik kaygı, hekim önerisi ve hasta tercihi gibi karar süreciyle ilişkili parametreler incelendi. Birincil bağımlı değişken, profilaktik mastektomi kararında hasta tercihinin varlığı olarak tanımlandı.

Bulgular: Altmış altı hastanın 41'inde (%62,1) profilaktik mastektomiye yönelik hasta tercihi saptandı. Hasta tercihi olan grup, olmayan gruba göre anlamlı olarak daha gençti ve evli hasta oranı daha yüksekti. Ayrıca bu grupta neoadjuvan sistemik tedavi alma, uzak metastaz varlığı ve ileri klinik T ve N evresi daha sıklıkla görüldü. Meme kanseri aile öyküsü, diğer kanserlere ait aile öyküsü ve genetik tanı varlığı hasta tercihi ile güçlü şekilde ilişkili bulundu. Psikolojik korku da hasta tercihi olan grupta anlamlı olarak daha yüksekti. Buna karşın multifokalite, moleküler alt tip, hekim önerisi ve estetik kaygı açısından anlamlı fark saptanmadı. Tek değişkenli lojistik regresyonda genç yaş, evli olma, neoadjuvan tedavi, psikolojik korku ve ileri klinik T/N evresi hasta tercihi ile ilişkiliydi.

Tartışma / Sonuç: Profilaktik mastektomiye yönelik hasta tercihi; genç yaş, ailesel/genetik risk göstergeleri, hastalık yükü ve psikososyal etkenler gibi çoklu faktörlerden etkilenmektedir. Bu nedenle karar süreci, bireysel hasta özellikleri dikkate alınarak yapılandırılmış danışmanlık ve ortak karar verme çerçevesinde ele alınmalıdır.

Anahtar Kelimeler: Profilaktik mastektomi, meme tümörleri, hastalığa genetik yatkınlık, anksiyete

Introduction

Prophylactic mastectomy is an effective surgical option for reducing the risk of breast cancer, particularly in high-risk settings such as BRCA1/2 mutations, a strong family history, and prior chest wall irradiation (1-3). Nevertheless, current consensus reports emphasize that prophylactic mastectomy is not routinely recommended for average-risk patients with unilateral breast cancer and that the decision should be based on the individual risk profile and patient-specific characteristics (1-3).

However, an increase in the rates of prophylactic mastectomy, particularly contralateral prophylactic mastectomy (CPM), has been observed in recent years (4). This trend cannot be explained solely by objective oncologic risk; in addition to genetic predisposition and family history, psychosocial factors such as fear of future cancer development, risk perception, the desire for peace of mind, and expectations regarding symmetry and cosmetic outcomes have also been reported to play a decisive role in this preference (5-7). Furthermore, the surgeon's recommendation and the quality of communication established with the patient directly influence the decision-making process (8,9).

Therefore, the aim of the present study was to evaluate demographic, clinicopathological, and decision-making factors associated with documented preference among patients who underwent CPM for unilateral breast cancer.

Materials and Methods

The study was approved by the relevant Mersin University Local Ethics Committee (approval no: 2026/027, date: 21.01.2026). The study was conducted in accordance with the principles of the Declaration of Helsinki.

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This was a single-center retrospective observational study conducted at a tertiary-care university hospital. The requirement for informed consent was waived by the ethics committee due to the retrospective design of the study. The study evaluated patients diagnosed with breast cancer who underwent CPM between January 2015 and January 2025. Patients who underwent prophylactic mastectomy during the study period and had complete clinical, pathological, and surgical data available were included. Patients with missing data, patients who underwent surgery for reasons other than prophylactic mastectomy, or patients in whom the key variables related to the decision-making process could not be assessed were excluded.

Data were obtained through a review of the hospital's electronic medical record system, operative notes, pathology reports, outpatient clinic records, and multidisciplinary tumor board evaluations. Demographic variables included age, marital status,

and menopausal status. Reproductive characteristics, such as age at menarche and age at first live birth, were also evaluated when available.

Clinical and tumor-related variables included a history of breast cancer, family history of breast cancer, family history of other cancers, presence of genetic mutations, multifocality or multicentricity of the tumor, history of neoadjuvant therapy, histopathological tumor type, tumor stage, nodal status, estrogen receptor status, progesterone receptor status, HER2 status, and the Ki-67 proliferation index. In addition, molecular subtypes were classified according to the available immunohistochemical data.

Variables related to the decision-making process included the patient's psychological fear, the burden of follow-up, aesthetic concerns, the physician's recommendation, and the patient's preference. The study's primary dependent variable was the presence of a patient preference regarding the decision to undergo prophylactic mastectomy.

Decision-making-related variables were evaluated using a predefined data collection form, derived from hospital electronic medical records, operative notes, pathology reports, outpatient clinic records, multidisciplinary tumor board evaluations, and telephone interviews with patients when additional clarification was required. Patient preference was considered present when the patient's explicit request, expressed willingness, or stated personal preference for CPM was documented in the medical records and/or confirmed during a telephone interview. A physician recommendation was considered present when the surgical decision was documented or reported as recommended by the treating surgeon or multidisciplinary team within the context of risk reduction, genetic or familial risk, surgical planning, or reconstruction-related considerations. When both patient preference and physician recommendation were identified, the variables were recorded separately based on the available information. To reduce subjectivity in the retrospective assessment, all decision-making-related variables were recorded on a predefined data collection form according to operational definitions. Unclear cases were re-evaluated by the study team and classified by consensus.

Psychological fear was defined as documented or patient-reported fear of developing contralateral breast cancer, fear of recurrence, cancer-related anxiety, or a desire to eliminate future cancer risk. This variable was assessed using predefined operational criteria based on clinical documentation and patient interviews, rather than a validated psychometric scale. Aesthetic concern was defined as documentation or a patient report indicating that symmetry, cosmetic expectations, breast appearance, or reconstruction-related aesthetic considerations influenced the decision. Difficulty with follow-up was defined

as documentation or patient report of concerns about long-term surveillance, repeated imaging, hospital visits, geographic or logistical barriers, or anxiety associated with continuous follow-up.

Prophylactic mastectomy was defined as a surgical procedure performed to reduce the risk of future breast cancer, rather than to treat an existing malignant lesion.

Menopausal status was classified based on the patient's menstrual history and clinical records. Family history was recorded according to the presence of breast cancer or other malignancies in first- or second-degree relatives. Genetic diagnosis was determined based on the presence of BRCA1, BRCA2, or other pathogenic mutations. Histopathological and immunohistochemical data were recorded according to the final pathology reports.

Statistical Analysis

Continuous variables were tested for normality and were presented as median and interquartile range (IQR), whereas categorical variables were presented as number and percentage. Comparisons between patients with and without patient preference were performed using the Mann-Whitney U test for continuous variables and the chi-square test or Fisher's exact test, as appropriate, for categorical variables. Univariable logistic regression analysis was performed to evaluate factors associated with patient preference, and odds ratios with 95% confidence intervals were calculated. A multivariable logistic regression model was not constructed because limited sample size, a relatively small number of outcome events, and complete separation observed in several covariates collectively precluded reliable estimation using standard logistic regression. Firth-penalized logistic regression was also considered an alternative for handling sparse data and complete separation. However, because of the small sample size, the limited number of outcome events, and the presence of multiple covariates exhibiting separation, a multivariable penalized model was not constructed. Therefore, only univariable logistic regression analyses were presented, and the findings were interpreted as exploratory associations rather than as independent predictors. Statistical analyses were performed using IBM SPSS Statistics for Windows, version 30.0 (IBM Corp., Armonk, NY, USA). A two-sided p -value of <0.05 was considered statistically significant.

Results

A total of 66 patients were included in the study. Of these, 41 patients (62.1%) had a documented preference for prophylactic mastectomy, whereas 25 (37.9%) had no such preference.

When demographic and reproductive characteristics were evaluated, the patient preference group was found to be

significantly younger than the no preference group [median age: 37.0 years (IQR: 26.0-45.0) vs. 44.0 years (IQR: 38.0-52.0), $p=0.014$]. In addition, marital status was significantly associated with patient preference; the proportion of married patients was higher in the patient preference group (95.1% vs. 72.0%, $p=0.021$). In contrast, no significant differences were observed between the groups with respect to age at menarche, age at first live birth, breastfeeding history, multiparity, menopausal status, or hormone replacement therapy ($p=0.867$, $p=0.171$, $p=0.190$, $p=0.359$, $p=0.945$, and $p=0.856$, respectively) (Table 1).

Regarding clinicopathological and treatment-related characteristics, the proportion of patients receiving neoadjuvant systemic therapy was significantly higher in the patient preference group than in the no-preference group (87.8% vs. 36.0%, $p<0.001$). Distant metastasis was also more frequent in the patient preference group (22.0% vs. 0%, $p=0.011$). Significant differences between the groups were also identified for clinical tumor and nodal stages. Patients in the patient preference group had a higher proportion of cT3-cT4 tumors and cN2-cN3 nodal disease (both $p<0.001$). By contrast, no significant differences were observed in the presence of multifocal primary cancer or in the distribution of molecular subtypes ($p=0.730$ and $p=0.164$, respectively). Although the rate of nipple-sparing mastectomy was higher in the patient preference group, the difference did

not reach statistical significance (70.7% vs. 44.0%, $p=0.058$). Similarly, no significant difference was found between the groups with respect to reconstruction status ($p=0.075$) (Table 2).

When risk-related, psychosocial, and decision-making variables were assessed, a family history of breast cancer was significantly more common in the patient preference group (100.0% vs. 12.0%, $p<0.001$). Likewise, a family history of other cancers was more frequently observed in the patient preference group (95.1% vs. 0%, $p<0.001$). The presence of a genetic diagnosis was strongly associated with patient preference: 90.2% of patients in the patient preference group had positive genetic tests, whereas no patient in the no-preference group did ($p<0.001$). The prevalence of psychological fear was significantly higher in the patient preference group (85.4% vs. 60.0%, $p=0.042$). In contrast, no statistically significant differences were found between the groups with respect to difficulty with follow-up, physician recommendation, or aesthetic concerns; however, borderline statistical significance was observed for difficulty with follow-up ($p=0.075$) and for aesthetic concerns ($p=0.082$) (Table 3).

In univariable logistic regression analysis, younger age, marital status, neoadjuvant systemic therapy, psychological fear, and advanced clinical T and N stages were significantly associated with patient preference for prophylactic mastectomy (Table 4).

Table 1. Demographic and reproductive characteristics according to patient preference

Variable	Overall (n=66)	No patient preference (n=25)	Patient preference (n=41)	p-value
Age, years	39.0 (31.0-47.8)	44.0 (38.0-52.0)	37.0 (26.0-45.0)	0.014
Age at menarche, years	14.0 (12.0-15.0)	14.0 (13.0-15.0)	14.0 (12.0-15.0)	0.867
Age at first live birth, years	22.0 (20.0-23.0)	21.0 (20.0-22.0)	22.0 (19.5-24.0)	0.171
Marital status				
No	9 (13.6)	7 (28.0)	2 (4.9)	0.021
Yes	57 (86.4)	18 (72.0)	39 (95.1)	
Breastfeeding history				
No	6 (9.1)	4 (16.0)	2 (4.9)	0.190
Yes	60 (90.9)	21 (84.0)	39 (95.1)	
Multiparity				
No	5 (7.6)	3 (12.0)	2 (4.9)	0.359
Yes	61 (92.4)	22 (88.0)	39 (95.1)	
Menopause				
No	36 (54.5)	13 (52.0)	23 (56.1)	0.945
Yes	30 (45.5)	12 (48.0)	18 (43.9)	
Hormone replacement therapy				
No	40 (60.6)	16 (64.0)	24 (58.5)	0.856
Yes	26 (39.4)	9 (36.0)	17 (41.5)	

Data are presented as median (IQR) for continuous variables and n (%) for categorical variables
IQR: Interquartile range

Table 2. Clinicopathological and treatment-related characteristics according to patient preference				
Variable	Overall (n=66)	No patient preference (n=25)	Patient preference (n=41)	p-value
Neoadjuvant systemic therapy				
No	21 (31.8)	16 (64.0)	5 (12.2)	<0.001
Yes	45 (68.2)	9 (36.0)	36 (87.8)	
Distant metastasis				
No	57 (86.4)	25 (100.0)	32 (78.0)	0.011
Yes	9 (13.6)	0 (0.0)	9 (22.0)	
Multifocal primary tumor				
No	56 (84.8)	22 (88.0)	34 (82.9)	0.730
Yes	10 (15.2)	3 (12.0)	7 (17.1)	
Molecular subtype				
HR-positive	12 (18.2)	7 (28.0)	5 (12.2)	0.164
HER2-positive	17 (25.8)	4 (16.0)	13 (31.7)	
TNBC	37 (56.1)	14 (56.0)	23 (56.1)	
Clinical T stage				
cT1	15 (22.7)	14 (56.0)	1 (2.4)	<0.001
cT2	14 (21.2)	9 (36.0)	5 (12.2)	
cT3	35 (53.0)	2 (8.0)	33 (80.5)	
cT4	2 (3.0)	0 (0.0)	2 (4.9)	
Clinical N stage				
cN0	11 (16.7)	11 (44.0)	0 (0.0)	<0.001
cN1	13 (19.7)	9 (36.0)	4 (9.8)	
cN2	36 (54.5)	4 (16.0)	32 (78.0)	
cN3	6 (9.1)	1 (4.0)	5 (12.2)	
Type of mastectomy				
Nipple-sparing mastectomy	40 (60.6)	11 (44.0)	29 (70.7)	0.058
Skin-sparing mastectomy	26 (39.4)	14 (56.0)	12 (29.3)	
Breast reconstruction				
No	6 (9.1)	0 (0.0)	6 (14.6)	0.075
Yes	60 (90.9)	25 (100.0)	35 (85.4)	
Data are presented as n (%) unless otherwise indicated				
HR: Hormone receptor, HER2: Human epidermal growth factor receptor 2, TNBC: Triple-negative breast cancer				

Discussion

In the present study, which included only patients who had undergone CPM, documented patient preference during the decision-making process could not be explained by a single variable; rather, age, family history, genetic risk, tumor burden, and psychosocial factors appeared to act in combination. Therefore, our findings should not be interpreted as identifying factors associated with undergoing CPM itself, but rather as factors associated with documented patient preference among patients who had already undergone this procedure. Our findings suggest that CPM remains an important option for selected high-risk patients, but for average-risk patients the decision is shaped

not only by oncologic indicators but also by patients' perceptions and preferences. Indeed, the current literature emphasizes that although this approach reduces the risk of cancer in the contralateral breast, it should not be regarded as a routine standard, particularly in average-risk patients with unilateral breast cancer, and that the decision should be individualized within the framework of shared decision-making (10-12).

The significantly younger age observed in the patient preference group is consistent with one of the most reproducible findings in the literature. Younger patients have been reported to show a greater tendency toward CPM, which may be related to the perception of a longer lifetime risk of contralateral breast

Table 3. Risk-related, psychosocial, and decision-related characteristics according to patient preference

Variable	Overall (n=66)	No patient preference (n=25)	Patient preference (n=41)	p-value
Family history of breast cancer				
No	22 (33.3)	22 (88.0)	0 (0.0)	<0.001
Yes	44 (66.7)	3 (12.0)	41 (100.0)	
Family history of other cancers				
No	27 (40.9)	25 (100.0)	2 (4.9)	<0.001
Yes	39 (59.1)	0 (0.0)	39 (95.1)	
Genetic diagnosis				
Absent	25 (37.9)	25 (100.0)	0 (0.0)	<0.001
Present	37 (56.1)	0 (0.0)	37 (90.2)	
Unknown	4 (6.1)	0 (0.0)	4 (9.8)	
Difficulty with follow-up				
No	60 (90.9)	25 (100.0)	35 (85.4)	0.075
Yes	6 (9.1)	0 (0.0)	6 (14.6)	
Psychological fear				
No	16 (24.2)	10 (40.0)	6 (14.6)	0.042
Yes	50 (75.8)	15 (60.0)	35 (85.4)	
Physician recommendation				
No	16 (24.2)	3 (12.0)	13 (31.7)	0.129
Yes	50 (75.8)	22 (88.0)	28 (68.3)	
Aesthetic concern				
No	26 (39.4)	6 (24.0)	20 (48.8)	0.082
Yes	40 (60.6)	19 (76.0)	21 (51.2)	

Data are presented as n (%), p-values were calculated using appropriate comparative tests

Table 4. Univariable logistic regression analysis of factors associated with patient preference for prophylactic mastectomy

Variable	Comparison	Odds ratio (95% CI)	p-value
Age, years	Per 1-year increase	0.94 (0.89-0.98)	0.009
Age at menarche, years	Per 1-year increase	0.97 (0.72-1.31)	0.844
Age at first live birth, years	Per 1-year increase	1.18 (0.94-1.50)	0.160
Marital status	Yes vs. no	7.58 (1.43-40.19)	0.017
Breastfeeding history	Yes vs. no	3.71 (0.63-21.99)	0.148
Multiparity	Yes vs. no	2.66 (0.41-17.15)	0.304
Menopause	Yes vs. no	0.85 (0.31-2.30)	0.746
Hormone replacement therapy	Yes vs. no	1.26 (0.45-3.51)	0.660
Neoadjuvant systemic therapy	Yes vs. no	12.80 (3.70-44.31)	<0.001
Psychological fear	Yes vs. no	3.89 (1.20-12.64)	0.024
Multifocal primary tumor	Yes vs. no	1.51 (0.35-6.47)	0.579
Physician recommendation	Yes vs. no	0.29 (0.07-1.16)	0.081
Aesthetic concerns	Yes vs. no	0.33 (0.11-1.00)	0.050
Molecular subtype	HER2-positive vs HR-positive	4.55 (0.91-22.63)	0.064
Molecular subtype	TNBC vs HR-positive	2.30 (0.61-8.66)	0.218
Clinical T stage	Per 1-stage increase	18.61 (5.17-66.94)	<0.001
Clinical N stage	Per 1-stage increase	12.19 (3.85-38.59)	<0.001

CI: Confidence interval, HR: Hormone receptor, HER2: Human epidermal growth factor receptor 2, TNBC: Triple-negative breast cancer

cancer, a preference for more aggressive treatment, and increased anxiety about the future (11-14). In our series, a higher rate of preference among married patients was also noteworthy. Although this finding has not been demonstrated consistently across all studies, family responsibilities, concerns about children, and fear of cancer recurrence have been shown to influence surgical preferences. Yu et al. (14) demonstrated that the family context plays an important role in attitudes toward genetic testing and risk-reducing surgery, whereas Padamsee et al. (15) reported that, in some patients, the decision was shaped by the desire to choose what was perceived as the “safest option” for their children. Therefore, the more pronounced patient preference observed among younger patients and those with greater family responsibilities appears clinically understandable.

In our study, strong associations between documented patient preference and family history of breast cancer, family history of other cancers, and the presence of a genetic diagnosis were largely consistent with current recommendations and evidence. Pathogenic variants, particularly BRCA1/2, and a strong family history are well-established factors associated with an increased risk of contralateral breast cancer and may therefore provide a clinically rational basis for risk-reducing surgery in selected patients (10,11,14). Accordingly, these findings should not be interpreted solely as evidence of an independent psychosocial tendency toward CPM. They may also reflect expected and guideline-consistent clinical decision-making in patients with hereditary or familial risk. Yi et al. (13) similarly reported family history and BRCA testing as important variables associated with CPM. In this context, patient preference may emerge from the interaction among objective risk information, perceived hereditary risk, counseling, and individual risk perception. Nevertheless, the literature shows that demand for CPM may persist even in patients with negative or indeterminate genetic test results. Therefore, communication regarding genetic risk should not be limited to whether testing was performed or positive, but should instead focus on conveying the individual absolute risk in a clear and comprehensible manner (11,12,16).

The significantly higher frequency of psychological fear in the patient preference group represents one of the most important findings of our study. Numerous studies have shown that the decision to undergo prophylactic mastectomy is often not based solely on an objective risk assessment, but is also driven by fear, anxiety about recurrence, the pursuit of “peace of mind,” and a tendency to choose the most aggressive treatment option (15,17,18). In particular, Padamsee et al. (15) reported that some patients perceived CPM as the “safest” and “most comprehensive” option, whereas Longfellow et al. (18) demonstrated that, in patients presenting with a strong pre-existing preference, a cautious approach by the surgeon did not always alter the final decision. In our series, the lack of a significant association with

physician recommendation may also be interpreted in this context: once patient preference becomes strongly established, medical advice may no longer be the sole determinant of the decision. By contrast, the borderline significance observed for difficulty with follow-up and aesthetic concerns is consistent with the themes of “burdensome surveillance”, symmetry, and cosmetic expectations that have been reported in the literature (10,12,13,17).

In patients without a documented preference, the decision to undergo CPM should also be made cautiously. In this subgroup, the absence of a documented patient preference does not necessarily indicate that the patient has no role in the decision-making process; rather, it indicates that an explicit, patient-driven request was not recorded as a primary or contributing factor. In these patients, CPM appeared to be driven more commonly by physician recommendation, multidisciplinary risk assessment, genetic or familial risk considerations, reconstruction-related planning, symmetry concerns, or other oncologic and surgical factors. Therefore, the no-preference group should not be regarded as a group in which the procedure was performed without patient involvement, but rather as a group in which the available documentation did not identify patient preference as a distinct determinant of the decision.

Another noteworthy finding was the association between documented patient preference and neoadjuvant systemic therapy, distant metastasis, and advanced clinical T/N stages. This finding should be interpreted cautiously, because current recommendations indicate that prophylactic or contralateral mastectomy should not be routinely encouraged in patients with advanced-stage or metastatic disease and should instead be considered only in highly selected circumstances (10,11). In the present cohort, this finding should not be interpreted as evidence supporting routine CPM in metastatic patients. Rather, it may reflect individualized decision-making influenced by patient preference, perceived disease burden, psychological fear, genetic or familial risk, reconstruction-related considerations, and multidisciplinary clinical judgment. The higher frequency of patients receiving neoadjuvant therapy in the CPM group reported by He et al. (12) is partly consistent with this observation. Similarly, the tendency to choose the “safest option,” as described by Padamsee et al. (15), may become more pronounced in patients who perceive their disease burden as high. Therefore, in patients with advanced or metastatic disease, it is particularly important to distinguish the risk of contralateral breast cancer from the biology and prognosis of the index tumor and to ensure that decisions are based on realistic clinical benefit rather than on fear alone.

One of the most important clinical implications of these findings is the need to strengthen structured counseling and shared decision-making processes. In the systematic review

by Naaseh et al. (17), decision support tools developed for CPM were found to be feasible and capable of improving patient satisfaction and knowledge; however, standardization regarding the timing of their delivery and the balance of content remains lacking. Similarly, Sung et al. (16) reported that lower levels of shared decision-making were associated with greater decisional conflict, and that decision quality, particularly in the context of genetic risk, was influenced by the decision-making process itself. Data from Steadman et al. (11) also suggest that structured and consistent patient counseling may reduce CPM rates. Therefore, particularly for younger patients, for those with a high perceived familial/genetic risk, or for those who exhibit marked psychological fear, clear risk communication, genetic counseling, open discussion of aesthetic expectations, and a structured exploration of patient values may improve the quality of decision-making.

Study Limitations

This study has several limitations. Its single-center retrospective design and relatively small sample size may limit the generalizability of the findings. Because the study included only patients who underwent CPM, the findings do not identify factors associated with the decision to undergo CPM when compared with non-CPM patients, but rather identify factors associated with documented patient preference within the CPM cohort. Psychosocial and decision-making-related variables, including psychological fear, aesthetic concern, and difficulty with follow-up, were assessed using clinical documentation and patient interviews rather than validated psychometric scales or standardized prospective instruments. Because complete separation was observed for some variables and the number of outcome events was limited, a multivariable logistic regression model could not be constructed using standard methods. Therefore, the findings should be interpreted as associations rather than as independent predictors. Despite these limitations, a major strength of the present study is that prophylactic mastectomy decision-making was evaluated alongside pathological, genetic, psychosocial, and decision-making-related factors.

Conclusion

This study demonstrates that patient preference for prophylactic mastectomy is associated with younger age, familial/genetic risk indicators, and psychological fear. Our findings suggest that this decision is shaped not only by oncologic factors but also by the patient's risk perception, fears, and individual life context. Therefore, the decision regarding prophylactic mastectomy should be addressed within the framework of structured counseling and shared decision-making.

Ethics

Ethics Committee Approval: The study was approved by the relevant Mersin University Local Ethics Committee (approval no: 2026/027, date: 21.01.2026).

Informed Consent: The requirement for informed consent was waived by the ethics committee due to the retrospective design of the study.

Footnotes

One of the author of this article (T.Ç.) is a member of the Advisory Board of this journal. He had no involvement in the peer-review process or editorial decision regarding this manuscript. The peer-review process and editorial decision were handled independently by another editor.

Authorship Contributions

Concept/Design: M.Y., M.Be., T.Ç., Data Collection or Processing: M.Y., M.B., M.Be., Analysis or Interpretation: M.Y., M.Be., Literature Review: M.Y., M.B., Writing, Reviewing and Editing: M.Y., M.B., M.Be., T.Ç.

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