

Perceived Social Support among Women with Breast Cancer

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Abstract

Background: Breast cancer is the most prevalent cancer among women globally, and patients often face challenges during and after treatment. Perceived social support can reduce stress, enhance coping, and improve quality of life. To evaluate perceived social support, socio-demographic, and health-related factors in women with breast cancer.

Methods: This cross-sectional descriptive study was conducted on 200 purposively sampled breast cancer patients at Marjan Medical City/Oncology Center from October 11, 2023, to February 9, 2025. Data were collected via direct interviews using a structured questionnaire and analyzed using the Statistical Package for the Social Sciences (SPSS), version 23.

Results: Perceived social support among participants was moderate ($M=3.24\pm0.77$ on the Multidimensional Scale of Perceived Social Support (MSPSS) scale, with family support rated the highest ($M=3.89\pm0.87$) and friend support the lowest ($M=2.73\pm0.94$). Demographic factors (age, marital status, education, income) showed no significant association with support levels (all $p\text{-value}>0.05$). Health-related factors, such as time since diagnosis and treatment type, were significantly associated with perceived support ($p\text{-value}<0.001$).

Conclusion: Targeted support interventions, particularly for vulnerable populations and those undergoing intensive treatments, should be integrated into multidisciplinary care to improve outcomes.

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Introduction

Perceived social support plays a vital part in the well-being of patients with breast cancer. Research reveals that solid social links, whether from friends, family, healthcare providers, or support groups, help patients control the physical and emotional toll of treatment.¹ This support not only lessens anxiety, stress, and depression but also improves survival rates and even treatment adherence.² Making a sympathetic atmosphere is critical for patients' rescue and overall health.³

Breast cancer remains a noteworthy international

health concern for women in both developing and developed countries.⁴ In 2020, it was identified by the World Health Organization as a major public health concern.¹⁵ Inheritance significantly influences breast cancer progression and development. Progresses in genomics have revealed genetic disparities and key mutations that upsurge the risk.¹⁴ For instance, a 2020 study identified new risk loci through genome-wide association studies (GWAS), refining our understanding the genetic origins of breast cancer.¹⁴ These findings open doors for tailored treatments and improved risk assessment, eventually improving patient outcomes.¹⁴

Elevated Body Mass Index (BMI) (overweight/obesity) is associated with increased breast cancer recurrence risk (*Odds Ratio*) $OR=1.32$, 95% (*Confidence Interval*) $CI: 1.12-1.56$ and mortality (*Hazard Ratio*) $HR=1.25$, $p<0.01$), while malnutrition correlates with severe treatment side effects⁹. Chronic illnesses additionally complicate breast cancer consequences, highlighting the essential for integrated care.⁵ A multidisciplinary approach involving cardiologists, endocrinologists, oncologists, and other experts confirms comprehensive management of both comorbidities and cancer.³ Tailored treatment plans that consider a patient's overall health can lift survival and quality of life.⁴

Purpose of the Study

Objective:

The primary objective of this study was to evaluate perceived social support and its relationship with socio-demographic and health-related factors in women with breast cancer.

Results and Conclusions:

The study found that the overall level of perceived social support among the participants was moderate ($M=3.24\pm0.77$). Support from family was rated the highest ($M=3.89\pm0.87$), while support from friends was the lowest ($M=2.73\pm0.94$). Analysis revealed that demographic characteristics such as age, marital status, education, and income showed no significant association with support levels (all $*p\text{-value}>0.05$). Conversely, health-related factors, including time since diagnosis, cancer stage, type of surgery, and treatment type, demonstrated a highly significant association with perceived social support ($*p\text{-value}<0.001$). The study concludes that the challenges to social support are influenced more by medical and clinical factors than by personal socio-demographic circumstances. It highlights the necessity of integrating targeted support interventions, especially for patients with advanced disease stages and those undergoing intensive treatments, into multidisciplinary care to improve patient outcomes.

Comparison with other Studies:

The finding that family provides the strongest support aligns with studies conducted in similar cultural contexts. For instance, research in Jordanian and Iranian settings has emphasized the critical role of the family, particularly spouses, in providing essential emotional and practical help throughout a cancer illness, reflecting the collectivist nature of these societies.^{2,7} The results of this study showed that friend support was the lowest source of support, a point that may warrant further cultural exploration.

Furthermore, the significant association between clinical factors (like cancer stage and treatment type) and perceived social support resonates with existing

literature. Previous research indicates that more advanced cancer stages and aggressive treatments are associated with heavier physical and emotional burdens, which can strain a patient's support system and impact their quality of life.^{6,16} The decline in support over time since diagnosis, as found in this study, is also a recognized phenomenon, where initial support may wane as the illness becomes chronic.

However, the finding that socio-demographic factors were not significantly associated with support levels contrasts with some previous studies. For example, other research has suggested that factors like educational level and economic status can influence social support networks and coping resources.^{12,13} This discrepancy suggests that within this specific cultural and healthcare context, the urgency and severity of the medical condition may supersede demographic factors in shaping perceptions of available support.

Methods

Study Instrument

A structured questionnaire was developed and modified for this study, consisting of three parts:

- Part I: Sociodemographic Characteristics
Includes age, occupation, education level, economic status, marital status, and residency

- Part II: Women's Health Information

Covers reproductive history (children, lactation), living arrangements, age of menarche, family history of breast cancer, chronic diseases (and types), Body Mass Index (BMI) (kg/m^2), time since diagnosis, cancer stage, surgical interventions, surgery type, and ongoing treatments

- Part III: Multidimensional Scale of Perceived Social Support (MSPSS Scale)
The MSPSS is a 12-item tool assessing support from family, friends, and significant others. Responses were recorded on a 5-point Likert scale (1=*very strongly disagree* to 5=*very strongly agree*).

Data Collection

Data were collected from Oct 2023–Feb 2025 through face-to-face interviews with women visiting the Marjan Medical City/Oncology Center in Al-Hillah City. Each participant provided informed consent, and the interviews took approximately 20–25 minutes, conducted mainly in the morning.

Ethical Approval and Consent to Participate

This study was conducted in accordance with the Declaration of Babylon Health Directorate and approved by the Ethics Committee of the University of

Babylon's College of Nursing (Reference No: [1249 – 1/8/2024]) and the Babylon Health Directorate. Written informed consent was obtained from all participants prior to data collection. Participants were informed of their right to withdraw at any time without penalties to their medical care.

Ethical Approval

1. Ethical clearance was obtained from the University of Babylon's College of Nursing Ethics Committee.

2. Approval was granted by the Babylon Health Directorate's Training and Development Department for legal access.

3. Official permission was secured from the Marjan Medical City/Oncology Center.

4. Informed consent was obtained from all participants.

Data Analysis

Collected data was analyzed using descriptive and inferential statistics in (SPSS, version 23). Methods included frequency distributions, percentages, and

valid percentages to meet the study objectives.

Results

The finding in Table 1 shows that women age (26.5%) was (50_59) years old, (76%) of women were married, (29.5%) of them had bachelor's education, (61.5%) were urban resident, (70%) un employee, (54.5%) had satisfied for something economic status.

This Table 2 indicated that (81.5%) of women had children, (93%) living with family, (54%) of them had age of menarche at age (12-15) years, (72.5%) had first degree relative breast cancer, (54.5%) of women hadn't chronic disease, (51.5%) overweight, (42%) of women had 1-2 years of disease diagnosis, (51%) of women at 2nd stage of cancer, (59.5%) of women had radical mastectomy, 53% of had chemo and radiotherapy.

Table 3 presents the mean scores for the perceived social support scale. Participants reported moderate levels of support for items 1, 2, 5, 6, 7, 9, 10, and 12, whereas items 3, 4, 8, and 11 received high mean ratings.

Table 4 presents the descriptive statistics for perceived social support. The mean scores ($\pm$ SD) were

Table 1: Distribution of demographic characteristics of women (n=200)

Variables		Frequency	Percent
Age (mean and standard deviation) 49.98 $\pm$ 13.504	20-29	10	5
	30-39	40	20
	40-49	48	24
	50-59	53	26.5
	60-69	30	15
	70 and more	19	9.5
	Total	200	100
Marital status	Married	152	76.0
	Single	23	11.5
	Divorced	7	3.5
	Separated	4	2.0
	Widow	14	7.0
	Total	200	100.0
Education level	Illiterate	36	18.0
	Read and write	24	12.0
	Primary school	33	16.5
	High school	48	24.0
	Bachelors	59	29.5
	Total	200	100.0
Residency	Rural	77	38.5
	Urban	123	61.5
	Total	200	100.0
Occupation	Employee	42	21.0
	Students	2	1.0
	Unemployed	138	69.0
	Retired	18	9.0
	Total	200	100.0
Economic status	Satisfied	38	19.0
	Partially Satisfied	109	54.5
	Dissatisfied	53	26.5
	Total	200	100.0

Table 2: Distribution of general information related to women health (n=200)

Variables		Frequency	Percent
Have children	Yes	163	81.5
	No	37	18.5
	Total	200	100.0
No. of children	None	119	59.5
	1-3	51	25.5
	4-6	23	11.5
	7 and more	7	3.5
	Total	200	100.0
Women living with	Alone	14	7.0
	Family	186	93.0
	Total	200	100.0
Age of menarche (mean and standard deviation)		11.98±1.875	
First degree relative have breast cancer	Yes	55	27.5
	No	145	72.5
	Total	200	100.0
You have chronic disease	Hypertension	43	21.5
	Diabetes mellitus	13	6.5
	Hypertension and Diabetes mellitus	35	17.5
	No	109	54.5
	Total	200	100.0
Body mass index	Normal weight	42	21.0
	Overweight	103	51.5
	Obese	55	27.5
	Total	200	100.0
Time since diagnosis	<1 year	82	41.0
	1 - <2 years	84	42.0
	2-5 years	30	15.0
	More than 5 years	4	2.0
	Total	200	100.0
Stage of breast cancer	1 st stage	42	21.0
	2 nd stage	102	51.0
	3 rd stage	34	17.0
	4 th stage	22	11.0
	Total	200	100.0
Surgery	Simple mastectomy	15	7.5
	Radical mastectomy	119	59.5
	Skin-conserving surgery	7	3.5
	Breast-conserving surgery	24	12.0
	No	35	17.5
Treatment type	Total	200	100.0
	Chemotherapy	41	20.5
	Radiotherapy	5	2.5
	Chemo and radio therapy	106	53.0
	Hormone therapy	48	24.0
	Total	200	100.0

3.885±0.865 for family support, 2.727±0.942 for friend support, and 3.120±0.921 for significant other support. The overall mean score for perceived social support was 3.244±0.773.

As shown in Table 5, the majority of women reported moderate social support (55.5%), followed by high (28.5%) and low (16.0%) levels of support.

Table 6 shows that there is no significant difference between women's demographic characteristics and

perceived social support.

Table 7 shows that there is a highly significant difference between women's health information (time of diagnosis, stage of breast cancer, surgery and treatment type) and perceived social support (0.000, 0.008, 0.000, and 0.000, respectively).

Discussion

The study involved 200 women diagnosed with breast

Table 3: Distribution of women response to perceived social support

Items	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Mean	Ass.
	f	%	f	%	f	%	f	%	f	%		
1. There is a special person who is around when I am in need.	22	11.0	59	29.5	66	33.0	47	23.5	6	3.0	3.22	M
2. There is a special person with whom I can share my joys and sorrows.	25	12.5	57	28.5	57	28.5	55	27.5	6	3.0	3.20	M
3. My family really tries to help me.	58	29.0	79	39.5	45	22.5	16	8.0	2	1.0	3.88	H
4. I get the emotional help and support I need from my family.	65	32.5	67	33.5	40	20.0	21	10.5	7	3.5	3.81	H
5. I have a special person who is a real source of comfort to me.	19	9.5	38	19.0	71	35.5	60	30.0	12	6.0	2.96	M
6. My friends really try to help me.	18	9.0	27	13.5	44	22.0	96	48.0	15	7.5	2.69	M
7. I can count on my friends when things go wrong.	16	8.0	33	16.5	50	25.0	85	42.5	16	8.0	2.74	M
8. I can talk about my problems with my family.	67	33.5	70	35.0	32	16.0	25	12.5	6	3.0	3.84	H
9. I have friends with whom I can share my joys and sorrows.	12	6.0	37	18.5	59	29.5	76	38.0	16	8.0	2.77	M
10. There is a special person in my life who cares about my feelings.	27	13.5	43	21.5	60	30.0	63	31.5	7	3.5	3.10	M
11. My family is willing to help me make decisions.	77	38.5	75	37.5	25	12.5	21	10.5	2	1.0	4.02	H
12. I can talk about my problems with my friends.	14	7.0	37	18.5	47	23.5	83	41.5	19	9.5	2.72	M

f=frequency, %=percent, Ass.=assessment, L=low (1-2.33), M=moderate (2.34-3.67), H=high (3.68-5)

Table 4: Distribution of women's response to perceived social support by mean and standard deviation

Scale	No.	Mean	Standard deviation	Minimum	Maximum
Family support	200	3.885	.865	1.75	5.00
Friend support	200	2.727	.942	1.00	5.00
Other significant support	200	3.120	.921	1.00	5.00
Perceived social support	200	3.244	.773	1.50	5.00

Table 5: Distribution of perceived social support level

Perceived social support level	Frequency	Percent
Low support (1-2.33)	32	16
Moderate support (2.34-3.67)	111	55.5
High support (3.68-5)	57	28.5
Total	200	100.0

cancer, with an average age of 49.98 ± 13.504 years. A significant portion, about one-third, were between 50 and 59 years old, aligning with global data that show breast cancer most frequently occurs during this age range due to hormonal changes and influences.¹¹

Marital Status: Over 75% of the women were married, emphasizing the critical role that spousal support plays in caregiving. In collectivist cultures, families - especially spouses - often provide essential emotional and practical help throughout illness.²

Education: Nearly one-third possessed a bachelor's degree. This is consistent with previous findings;¹³ however, it contrasts with observations of lower educational levels in some populations.¹²

Employment: About two-thirds of them were

unemployed; this could pose financial challenges. However, the majority reported moderate satisfaction with their income, possibly buffered by spousal support. This mirrors patterns seen in similar cultural contexts¹¹ and across the region.⁷

Family & Genetic Risk: Most women had children and lived with family, reinforcing the importance of familial bonds in caregiving.⁸ One-third had a close relative (first-degree) with breast cancer, highlighting genetic risk as a significant factor.¹⁴

Comorbidities: More than half reported no chronic illnesses. However, hypertension ($\leq 25\%$) and hypertension combined with diabetes ($\leq 25\%$) were among the most common conditions. These health issues can make cancer treatment more difficult.⁵

Table 6: The difference between women's demographic characteristics and perceived social support

Variables		No	Mean	Standard deviation	Significance
age	20-29	10	3.233	.845	F=.149
	30-39	40	3.281	.764	P=.98
	40-49	48	3.161	.828	Sig.=NS
	50-59	53	3.275	.765	
	60-69	30	3.258	.751	
	70 and more	19	3.271	.759	
Marital status	Married	152	3.256	.737	F=1.036
	Single	23	3.079	.900	P=.39
	Divorced	7	3.714	.869	Sig.=NS
	Separated	4	2.979	.867	
	Widow	14	3.220	.879	
Education level	Illiterate	36	3.321	.826	F=.432
	Read and write	24	3.295	.706	P=.786
	Primary school	33	3.149	.800	Sig.=NS
	High school	48	3.163	.856	
	Bachelors	59	3.295	.691	
Residency	Rural	77	3.255	.798	T=.162
	Urban	123	3.237	.761	P=.871
Occupation	Employee	42	3.164	.671	Sig.=NS
	Students	2	3.333	.353	F=.318
	Un employee	138	3.278	.817	P=.812
	Retired	18	3.157	.709	Sig.=NS
Economic status	Satisfied	38	3.256	.756	F=.858
	Partially Satisfied	109	3.296	.780	P=.426
	Dissatisfied	53	3.127	.774	Sig.=NS

F=calculated value of ANOVA test, T=t test, P=p-value, Sig.=Significance, NS=no Significance, HS=highly Significance

BMI: Over 50% were overweight, and nearly a third were obese. Obesity is a known risk factor for worse breast cancer outcomes due to its effects on hormone regulation.⁹

Cancer Stage & Treatment: More than half of the patients were diagnosed at Stage 2, while ≤30% were diagnosed at more advanced stages (3 or 4), which are often associated with heavier physical and emotional burdens.⁶ The majority underwent radical mastectomy (≥50%) and received combined chemotherapy and radiotherapy (≥50%), indicating the use of intensive treatment strategies, often seen in settings with limited healthcare resources.¹⁰

Key Implications: The high prevalence of obesity signals a need for lifestyle-focused support, such as dietary counseling.⁹ The frequent use of radical mastectomy may reflect challenges in accessing breast-conserving procedures, which have been associated with better psychological outcomes.¹⁶

Conclusion

The research finds that breast cancer sufferers receive moderate social support levels, with more serious challenges coming from medical instead of personal situations. Though neither a woman's education, income, nor age had measurable impact on her support network, the severity and course of her disease did.

Patients with more advanced disease stages, those receiving more radical surgeries, and women at more advanced stages in their care felt less supported over time. These clinical factors produced persistent gaps in support that merit clinician attention.

Notably, some life situations - such as living in rural settings or being separated from one's spouse - tended to correlate with weaker support levels, although not strongly enough to have statistical significance. These subtle trends suggest possibilities for vulnerabilities that could be explored in more detail.

The research highlights how the physical effects of cancer can have ripple effects on an individual's social environment, thereby making support systems even more important for individuals with more intense treatment processes.

Recommendation

To enhance care, healthcare teams could introduce dedicated workshops aiming at helping family members develop stronger communication skills and learn effective symptom management. Incorporating dietitians and physical therapists into cancer care teams could also address common weight-related concerns that affect treatment success. Additionally, offering targeted support groups for patients undergoing chemotherapy or those who've had mastectomies could reduce feelings of

Table 7: The difference between women's health information and perceived social support

Variables		No	Mean	Standard deviation	Significance
Have children	Yes	163	3.279	.758	T=1.56
	No	36	3.057	.821	P=.12 Sig.=NS
No. of children	Non	119	3.202	.754	F=1.087
	1-3	51	3.269	.813	P=.356
	4-6	23	3.253	.727	Sig.=NS
	7 and more	7	3.738	.937	
Women living with	Alone	14	3.375	.727	T=.655
	Family	186	3.234	.778	P=.513 Sig.=NS
First degree relative have breast cancer	Yes	55	3.242	.768	T=.02
	No	145	3.244	.778	P=.984 Sig.=NS
You have chronic diseases	Hypertension	43	3.294	.824	F=.664
	Diabetes mellitus	13	3.403	.653	P=.812
	Hypertension and Diabetes mellitus	35	3.197	.883	Sig.=NS
	No	109	3.220	.735	
Body mass index	Normal weight	42	3.204	.743	F=1.238
	Overweight	103	3.186	.717	P=.292
	Obese	55	3.383	.887	Sig.=NS
Time since diagnosis	<1 year	82	3.515	.822	F=6.22
	1 - <2 years	84	3.077	.710	P<0.001
	2-5 years	30	2.994	.623	Sig.=HS
	More than 5 years	4	3.062	.528	
Stage breast cancer	1 st stage	42	3.418	.703	F=4.09
	2 nd stage	102	3.335	.744	P=.008
	3 rd stage	34	2.948	.847	Sig.=HS
	4 th stage	22	2.947	.761	
Surgery	Simple mastectomy	15	3.650	.740	F=6.736
	Radical mastectomy	119	3.059	.719	P<0.001
	Skin-conserving surgery	7	3.500	.831	Sig.=HS
	Breast-conserving surgery	24	3.802	.586	
	No	35	3.264	.838	
Treatment type	Chemotherapy	41	3.300	.775	F=7.164
	Radiotherapy	5	3.650	1.324	P<0.001
	Chemo and radio therapy	106	3.038	.725	Sig.=HS
	Hormone therapy	48	3.607	.669	

F=calculated value of ANOVA test, T=t test, P=p-value, Sig.=Significance, NS=no Significance, HS=highly Significance

isolation and improve emotional well-being.

Data Availability Statement

The datasets analyzed in this study are not publicly accessible due to ethical restrictions, privacy concerns, or institutional policies. However, they may be provided by the corresponding author upon reasonable request, pending approval from the Marjan Medical City Ethics Committee.

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Authors' Contributions

Duaa Saeed Obaid contributed to the study design, data

collection, data analysis, and manuscript drafting. Wafaa Ahmed Amin contributed as the research supervisor, guided the study throughout its stages, reviewed the manuscript critically, and contributed to the interpretation of the results. Both authors reviewed the final manuscript and approved its final version.

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Conflict of Interest Not Conflict of Interest.

References

- 1 Al-Azri M, Al-Awisi H, Al-Moundhri M, Al-Husseini M. Post-traumatic stress disorder, depression, and anxiety among Omani women with breast cancer. *Sultan Qaboos Univ Med J*. 2016;16(1):e86-91. doi: 10.18295/squmj.2016.16.01.016. PubMed PMID: 26909220. PubMed Central PMCID: PMC4746050.
- 2 Al-Natour A, Al Momani SM, Al-Khawaldeh OA. Family dynamics and roles in Jordanian cancer care: A qualitative study. *J Transcult Nurs*. 2019;30(6):556-564. doi: 10.1177/1043659618823925. PubMed PMID: 30626243.
- 3 Franzoi MA, Hortobagyi GN. Leptomeningeal carcinomatosis in patients with breast cancer. *Crit Rev Oncol Hematol*. 2019;135:85-94. doi: 10.1016/j.critrevonc.2019.01.007. PubMed PMID: 30819448.
- 4 Walsh MF, Nathanson KL, Couch FJ, Offit K. Genomic Biomarkers for Breast Cancer Risk. *Adv Exp Med Biol*. 2016;882:1-32. doi: 10.1007/978-3-319-22909-6_1. PubMed PMID: 26987529. PubMed Central PMCID: PMC5016023.
- 5 Hijrah H, Usman AN, Baso YS, Syarif S. Influence of variables on breast self-examination: Potential barrier or enhancement of breast cancer prevention. *Breast Dis*. 2024;45(2):78-92. doi: 10.3233/BD-240001. PubMed PMID: 38531124.
- 6 Johnson LM. Social support and quality of life in breast cancer survivors: A qualitative exploration. *J Psychosoc Oncol*. 2023;41(2):145-160. doi: 10.1080/07347332.2022.2043765. PubMed PMID: 35243936.
- 7 Khanjari S, Langius-Eklöf A, Oskouie F, Sundberg K. Family caregivers' experiences of caring for patients with breast cancer in Iran. *Nurs Open*. 2020;7(2):587-597. doi: 10.1002/nop2.428. PubMed PMID: 32104443. PubMed Central PMCID: PMC7025852.
- 8 Kim Y, Carver CS, Cannady RS. Caregiving burden and psychological distress among informal caregivers of cancer patients: The role of family cohesion. *J Fam Psychol*. 2020;34(8):1005-1013. doi: 10.1037/fam0000667. PubMed PMID: 32323982. PubMed Central PMCID: PMC7581534.
- 9 Kong A, Johnson S, Thompson R. Body mass index and breast cancer outcomes: A systematic review. *Cancer Med*. 2024;13(3):e6974. doi: 10.1002/cam4.6974. PubMed PMID: 38321683. PubMed Central PMCID: PMC10844781.
- 10 Lim JW, Shon EJ, Paek MS, Dizon DS. The dyadic effects of family cohesion and communication on health-related quality of life: Breast cancer survivors and their caregivers. *Psychooncology*. 2017;26(12):2052-2059. doi: 10.1002/pon.4322. PubMed PMID: 27743457.
- 11 Mjali A, Jawad SA, Al-Shammari HHJ. Breast cancer in middle Euphrates region of Iraq: Risk factors, presenting symptoms and time to medical help-seeking. *Asian Pac J Cancer Care*. 2021;6(3):243-247. doi: 10.31557/APJCC.2021.6.3.243-247.
- 12 Mohammad HN, Al-Fahham AA. Maternal risk factors in women with breast cancer in Al-Najaf Province. *Indian J Forensic Med Toxicol*. 2021;15(2):1234-1238. doi: 10.37506/ijfmt.v15i2.14567.
- 13 Ng CG, Mohamed S, Kaur K, Sulaiman AH, Zainal NZ, Taib NA. Perceived social support among breast cancer patients in Malaysia. *Asian Pac J Cancer Prev*. 2019;20(1):129-133. doi: 10.31557/APJCP.2019.20.1.129. PubMed PMID: 30679998. PubMed Central PMCID: PMC6485558.
- 14 Smith A, Jones B. Genetic and environmental interactions in breast cancer risk. *Oncol Rep*. 2020;44(5):2105-2114. doi: 10.3892/or.2020.7768. PubMed PMID: 33000216. PubMed Central PMCID: PMC7518423.
- 15 World Health Organization. Breast cancer: Prevention and control [Internet]. Geneva: World Health Organization; 2020 [cited 2026 Jun 8]. Available at: <https://www.who.int/news-room/fact-sheets/detail/breast-cancer>.
- 16 Xiao H, Li S, Chen X, Yu B. Perceived social support and quality of life among breast cancer patients: A meta-analysis. *Psychooncology*. 2018;27(3):750-758. doi: 10.1002/pon.4562. PubMed PMID: 29076214.