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Psychological Distress and Influencing Factors in Newly Diagnosed Patients with Breast Cancer: A Cross-Sectional Study

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Purpose: Cancer diagnosis is associated with psychological distress, which often leads to a significant reduction in adaptation and quality of life. This study aimed to identify the prevalence and related factors of psychological distress in newly diagnosed breast cancer patients. **Methods:** The study included 138 women scheduled for surgery or neoadjuvant chemotherapy following a recent breast cancer diagnosis at a university hospital in Korea. Psychological distress was assessed using the National Comprehensive Cancer Network Distress Thermometer and problem lists. Data collection occurred from November 1, 2021, to November 30, 2022. Descriptive statistics and logistic regression analysis were utilized for data analysis. **Results:** The average age of the participants was 51.72 years. Among the 138 participants, 67.4% (n=93) reported moderate to severe levels of psychological distress. Multivariate logistic regression analysis identified financial burden (Odds Ratio [OR]=4.32), fears (OR=5.35), and nervousness (OR=5.50) as predictors of moderate to severe psychological distress. **Conclusion:** Approximately two-thirds of newly diagnosed breast cancer patients experienced significant psychological distress. Nervousness, fears, and financial burden were significant factors influencing this distress. Therefore, management of psychological distress should be implemented for patients experiencing financial burdens or emotional problems, such as nervousness and fear, from the time of diagnosis.

Key Words: Breast neoplasms; Psychological distress; Risk factors

INTRODUCTION

Breast cancer is the most common cancer among women worldwide [1]. In Korea, it is the second most prevalent cancer among women. The 5-year and 10-year relative survival rates are notably high, at 93.8% and 89.4% respectively, attributed to early diagnosis and advanced treatment options [1,2]. With the rise in survival rates, patients are living longer as survivors, highlighting the need to focus on the health challenges they face [3,4].

Cancer diagnosis induces significant psychological distress in patients [5]. Immediately following diagnosis, breast cancer patients often experience psychological problems such as anxiety, depression, worry, fear, and sadness. They may also experience physical symptoms like sleep disorders and fatigue, in addition to financial challenges [5-7]. In the initial stages post-diagnosis, breast cancer patients deal with psychological distress as they grapple with their diagnosis and confront an uncertain future with the disease [8]. Psychological distress is defined as an unpleasant emotional state that disrupts their ability to effectively respond to treatment across physical, psychological, social, and spiritual dimensions [9]. It includes a spectrum of negative emotions such as worry, anxiety, embarrassment, sadness, anger, guilt, and depression [5,10].

The time of cancer diagnosis marks a critical juncture where patients must come to terms with their new reality and actively participate in their treatment plan [11]. Elevated levels of psychological distress can compromise

decision-making abilities regarding treatment options and lead to increased unmet needs, complicating the adjustment to life as a cancer patient [12]. Specifically, high psychological distress at the time of breast cancer diagnosis adversely impacts the patients' quality of life by diminishing their satisfaction with cancer treatment and reducing their capacity to manage the sequelae or adverse effects of the treatment [13-15]. Consequently, a comprehensive examination of the factors that contribute to psychological distress in newly diagnosed breast cancer patients is essential. Identifying those at high risk and implementing interventions to reduce psychological distress are critical steps in improving patient outcomes [16].

Internationally, research efforts have consistently focused on determining the extent of psychological distress and related factors in newly diagnosed breast cancer patients, as well as developing and validating educational programs that address common psychological and social symptoms or difficulties [5,17-21]. In South Korea, studies have been conducted to identify factors associated with psychological distress [22] and to validate distress management programs [3] for breast cancer patients who are currently undergoing treatment or have completed primary treatment. However, there have been few studies that specifically explore distress-related factors in newly diagnosed breast cancer patients [23]. Therefore, the purpose of this study is to explore the prevalence of psychological distress and related factors in patients with breast cancer at the time of diagnosis.

METHODS

1. Study Design

This cross-sectional study was conducted to determine the prevalence of psychological distress and its associated factors in patients newly diagnosed with breast cancer.

2. Study Participants

Participants were selected through convenience sampling from a pool of patients scheduled for surgery or neoadjuvant chemotherapy following a new breast cancer diagnosis at Ajou University Hospital between November 1, 2021, and November 30, 2022. The inclusion criteria mandated that participants understand the study's purpose and provide voluntary informed consent. The study targeted women aged 19 years or older, diagnosed with stage 1, 2, or 3 breast cancer, who had no previous history of cancer. The exclusion criteria encompassed health con-

ditions likely to cause psychological distress, such as psychiatric illnesses or cognitive impairment.

We used G*Power 3.1.9.4 to calculate the required sample size for logistic regression analysis, assuming a significance level of $\alpha = .05$, power=.80, and an Odds Ratio (OR) of 2.0 [22]. The minimum sample size required was 113 patients. To account for potential dropouts, we set the target sample size at 141 patients. After excluding three patients due to incomplete responses, data from the remaining 138 patients were included in the final analysis.

3. Study Measures

1) Sociodemographic and clinical characteristics

A structured questionnaire was used to measure participants' sociodemographic characteristics (e.g., age, educational level, presence of spouse, occupation, and financial burden) and clinical characteristics (e.g., stage of cancer and presence of other diseases).

2) Psychological distress

To assess the prevalence of psychological distress and its related factors, we employed the Distress Thermometer (DT) and Problem List (PL) version 3, developed by the National Comprehensive Cancer Network (NCCN) Management Panel in 2019. These tools are widely recognized for their effectiveness in initial psychological distress screening [9]. The DT uses an 11-point visual analogue scale, similar to a thermometer, to measure the level of psychological distress experienced by participants over the past week. The scale ranges from 0 points, indicating "no distress," to 10 points, indicating "extreme distress." Higher scores on this scale signify greater psychological distress. According to NCCN guidelines, a distress cut-off score of 4 points is recommended. Scores below 4 points are classified as mild psychological distress, while scores of 4 points or higher are classified as moderate to severe distress [9].

The NCCN also recommends using the PL to identify sources of psychological distress. The PL is composed of 39 items, distributed across five domains: practical problems (6 items), family problems (4 items), emotional problems (6 items), spiritual/religious problems (1 item), and physical problems (22 items). Participants indicate whether they have experienced each problem in the past week by marking each item with "yes" or "no."

4. Ethical Considerations

Before initiating the study, we received approval from

the Institutional Review Board at Ajou University Hospital (IRB No. AJOUIRB-SUR-2021-541). We obtained written informed consent from all participants, who were fully informed about the study's purpose, background, and participation procedures. An investigator thoroughly explained the methods of storing, managing, disposing of, and maintaining the confidentiality of personal information, ensuring participants were aware of their rights regarding data privacy. Participants were also informed that their involvement was entirely voluntary and that they could withdraw their consent at any time without facing any negative consequences.

5. Data Collection

Prior to commencing the study, we explained its objectives to the relevant department and secured their permission and cooperation. During the data collection phase, we enrolled patients from the study hospital who met the eligibility criteria and voluntarily provided written consent to participate. An investigator met with the participants in a private area of the breast cancer center, where they were given the study questionnaires along with an explanation sheet. The investigator thoroughly explained the study's objectives and background, outlined the participation process, provided an estimate of the time required to complete the questionnaires, and discussed the expected benefits and incentives. Additionally, the investigator emphasized the voluntary nature of participation, including the right to withdraw at any time. The methods for storing, managing, and disposing of the collected data were also explained. Participants were reassured that the authors had no conflicts of interest concerning the study's conduct and were provided with a contact number for any inquiries. Participants who gave their written consent then proceeded to fill out the structured self-report questionnaire, which took approximately 10 minutes to complete.

6. Data Analysis

The data collected in this study were analyzed using IBM SPSS 25.0. The analysis methods are described as follows. Initially, we employed descriptive statistics to examine participants' sociodemographic and disease-related characteristics, the extent of psychological distress, problem lists, and the incidence within different psychological distress groups. Subsequently, we utilized the x^2 test, independent t-test, and Fisher exact test to analyze differences between psychological distress groups based on sociodemographic and disease-related characteristics. We

then assessed differences between psychological distress groups according to participants' problem lists using the x^2 test, independent t-test, and Fisher exact test. Finally, we conducted binomial logistic regression analysis to identify factors influencing the psychological distress group.

RESULTS

1. Participants' Sociodemographic and Clinical Characteristics

Table 1 presents the sociodemographic and clinical characteristics of the participants. The average age was 51.72 ±9.41 years, with 70 participants (50.7%) having attained a high school education or less. A majority, 103 individuals (74.6%), reported having a spouse, and 109 (79.0%) were currently employed. Financially, 53 participants (38.4%) described their situation as 'burdensome' At diagnosis, the most prevalent cancer stage was stage 1, affecting 73 individuals (52.9%), followed by stage 2 with 54 individuals (39.1%), and stage 3 with 11 individuals (8.0%). Additionally, 87 participants (63.0%) indicated an absence of comorbidities (Table 1).

2. Descriptive Statistics of Psychological Distress and Problem Lists

The mean psychological distress score among the participants was 5.22±2.68. Those with a score below the DT cut-off score (<4 points) were categorized into the mild distress group, consisting of 45 individuals (32.6%). Conversely, participants scoring at or above the cut-off score (≥4 points) were placed in the moderate-severe distress group, which included 93 individuals (67.4%) (Table 2).

We analyzed participant-reported issues across five domains of the PL. In the practical problems domain, the most commonly reported issue was treatment decisions (96 cases, 69.6%), followed by insurance/financial problems (68 cases, 49.3%), and work/school issues (65 cases, 47.1%). In the family problems domain, the issues frequently reported were family health problems (52 cases, 37.7%), dealing with a partner (45 cases, 32.6%), and dealing with children (44 cases, 31.9%). In the emotional problems domain, the most common issues were worry (115 cases, 83.3%), fear (93 cases, 67.4%), sadness (76 cases, 55.1%), and depression (70 cases, 50.7%). Additionally, 26 individuals (18.8%) reported experiencing spiritual/religious problems. Among physical problems, fatigue was the most common issue (90 cases, 65.2%), followed by

Table 1. Differences in Sociodemographic and Clinical Characteristics between the Two Groups   (*N*=138)

Characteristics	Categories	Total (*N*=138)	Mild distress group (n=45)	Moderate-severe distress group (n=93)	x^2 or t	*p*
		n (%) or M±SD	n (%) or M±SD	n (%) or M±SD		
Age (year)		51.72±9.41	53.84±9.04	50.70±9.46	1.86	.066
Educational level	High school graduate or lower	70 (50.7)	28 (62.2)	42 (45.2)	3.53	.060
	Bachelor's degree or higher	68 (49.3)	17 (37.8)	51 (54.8)		
Presence of spouse	Yes	103 (74.6)	36 (80.0)	67 (72.0)	1.01	.314
	No	35 (25.4)	9 (20.0)	26 (28.0)		
Occupation	Yes	109 (79.0)	37 (82.2)	72 (77.4)	0.42	.516
	No	29 (21.0)	8 (17.8)	21 (22.6)		
Financial burden	Low	47 (34.1)	19 (42.2)	28 (30.1)	12.47	.002
	Middle	38 (27.5)	18 (40.0)	20 (21.5)		
	High	53 (38.4)	8 (17.8)	45 (48.4)		
Cancer stage	Stage I	73 (52.9)	23 (51.1)	50 (53.8)	0.35	.841
	Stage II	54 (39.1)	19 (42.2)	35 (37.6)		
	Stage III	11 (8.0)	3 (6.7)	8 (8.6)		
Comorbidity	Yes	51 (37.0)	18 (40.0)	33 (35.5)	0.27	.606
	No	87 (63.0)	27 (60.0)	60 (64.5)		

M=mean; SD=standard deviation.

memory/concentration problems (55 cases, 39.9%), sleep problems (53 cases, 38.4%), and concerns about appearance (52 cases, 37.7%) (Table 2).

3. Differences in Psychological Distress by Participants' Sociodemographic and Clinical Characteristics

We analyzed differences in psychological distress according to participants' sociodemographic and clinical characteristics (Table 1). A higher percentage of participants in the moderate-severe distress group (48.4%) described their financial situation as 'burdensome' compared to those in the mild distress group (17.8%) (x^2=12.47, *p*=.002).

4. Differences in Psychological Distress by Problem Lists

When examining differences in psychological distress among participants according to their PLs (Table 2), the moderate-severe distress group had higher ratios of patients reporting depression (x^2=12.74, *p*<.001), fear (x^2=22.80, *p*<.001), nervousness (x^2=10.36, *p*=.001), sadness (x^2=21.78, *p*<.001), worry (x^2=13.36, *p*<.001), and loss of interest in usual activities (x^2=6.68, *p*=.010) among emotional problems, and fatigue (x^2=15.57, *p*<.001), memory/concentration problems (x^2=16.45, *p*<.001), and sleep problems (x^2=12.01, *p*=.001) among physical problems than the mild distress group.

5. Factors Influencing Psychological Distress at the Time of Diagnosis

We conducted logistic regression analysis to explore the factors influencing participants' psychological distress, with the results detailed in Table 3. Initially, we confirmed that the model was well-fitted, as shown by a *p*-value of .923 in the Hosmer-Lemeshow test for goodness of fit for logistic regression models. Subsequently, we carried out binomial logistic regression analysis including financial burden and the PL items that demonstrated statistically significant differences at a .05 significance level in the univariate analysis (Table 3). The analysis identified financial burden, fears, and nervousness as significant factors contributing to psychological distress. Participants experiencing financial burden were 4.32 times more likely to fall into the moderate-severe distress category (OR=4.32, 95% CI= 1.25, 14.97; *p*=.021) than those without such issues. Similarly, participants who reported issues with fears (OR= 5.35, 95% CI=1.68, 17.0; *p*=.004) or nervousness (OR=5.50, 95% CI=1.48, 20.39; *p*=.011) were 5.35 and 5.5 times more likely, respectively, to be classified within the moderate-severe distress group.

DISCUSSION

This cross-sectional study examined the prevalence of

Table 2. Differences in Psychological Distress and Problem Lists between the Two Groups (*N*=138)

Variables	Categories	Total (*N*=138) n (%) or M±SD	Mild distress group (n=45) n (%) or M±SD	Moderate-severe distress group (n=93) n (%) or M±SD	x^2 or t	*p*
Distress thermometer		5.22±2.68	2.09±0.95	6.73±1.78	-20.03	<.001
Practical problems	Child care	47 (34.1)	12 (25.5)	35 (74.5)	1.62	.202
	Housing	64 (46.4)	18 (28.1)	46 (71.9)	1.09	.296
	Insurance/financial	68 (49.3)	19 (27.9)	49 (72.1)	1.33	.249
	Transportation	55 (39.9)	18 (32.7)	37 (67.3)	0.00	.981
	Work/school	65 (47.1)	17 (26.2)	48 (73.8)	2.33	.127
	Treatment decisions	96 (69.6)	31 (32.3)	65 (67.7)	0.01	.904
Family problems	Dealing with children	44 (31.9)	12 (27.3)	32 (72.7)	0.84	.360
	Dealing with partner	45 (32.6)	11 (24.4)	34 (75.6)	2.03	.155
	Ability to have children[†]	4 (2.9)	2 (50.0)	2 (50.0)		.596
	Family health issues	52 (37.7)	15 (28.8)	37 (71.2)	0.54	.463
Emotional problems	Depression	70 (50.7)	13 (18.6)	57 (81.4)	12.74	<.001
	Fears	93 (67.4)	18 (19.4)	75 (80.6)	22.80	<.001
	Nervousness	40 (29.0)	5 (12.5)	35 (87.5)	10.36	.001
	Sadness	76 (55.1)	12 (15.8)	64 (84.2)	21.78	<.001
	Worry	115 (83.3)	30 (26.1)	85 (73.9)	13.36	<.001
	Loss of interest in usual activities	45 (32.6)	8 (17.8)	37 (82.2)	6.68	.010
	Spiritual/Religious concerns	26 (18.8)	10 (38.5)	16 (61.5)	0.50	.480
Physical problems	Appearance	52 (37.7)	14 (26.9)	38 (73.1)	1.23	.268
	Bathing/dressing[†]	8 (5.8)	2 (25.0)	6 (75.0)		1.000
	Breathing[†]	8 (5.8)	1 (12.5)	7 (87.5)		.274
	Changes in urination[†]	4 (2.9)	1 (25.0)	3 (75.0)		1.000
	Constipation[†]	13 (9.4)	2 (15.4)	11 (84.6)		.221
	Diarrhea[†]	12 (8.7)	2 (16.7)	10 (83.3)		.336
	Eating	35 (25.4)	7 (20.0)	28 (80.0)	3.39	.065
	Fatigue	90 (65.2)	19 (21.1)	71 (78.9)	15.57	<.001
	Feeling swollen	33 (23.9)	7 (21.2)	26 (78.8)	2.56	.109
	Fevers[†]	9 (6.5)	2 (22.2)	7 (77.8)		.718
	Getting around[†]	9 (6.5)	1 (11.1)	8 (88.9)		.271
	Indigestion	35 (25.4)	7 (20.0)	28 (80.0)	3.39	.065
	Memory/concentration	55 (39.9)	7 (12.7)	48 (87.3)	16.45	<.001
	Mouth sores[†]	9 (6.5)	3 (33.3)	6 (66.7)		1.000
	Nausea[†]	10 (7.2)	1 (10.0)	9 (90.0)		.166
	Nose dry/congested	19 (13.8)	5 (26.3)	14 (73.7)	0.40	.529
	Pain	34 (24.6)	5 (14.7)	29 (85.3)	6.58	.010
	Sexual[†]	6 (4.3)	2 (33.3)	4 (66.7)		1.000
	Skin dry/itchy	34 (24.6)	11 (32.4)	23 (67.6)	0.00	.971
	Sleep	53 (38.4)	8 (15.1)	45 (84.9)	12.01	.001
	Substance use	0 (0.0)	0 (0.0)	0 (0.0)		
	Tingling in hands/feet	27 (19.6)	6 (22.2)	21 (77.8)	1.65	.199

M=mean; SD=standard deviation; [†]Fisher's exact test.

psychological distress and its associated factors in patients with breast cancer at the time of diagnosis. The average psychological distress score among participants was 5.22 points. According to the NCCN guidelines, which set a cut-off value at 4 points [9], 32.6% of participants fell into the mild distress category, while 67.4% were classified as experiencing moderate to severe distress. These findings align closely with those of Ciambella et al. [7], who reported that 66.5% of newly diagnosed breast cancer patients experienced moderate to severe stress using the same scale. However, this study's results show a higher prevalence of moderate to severe distress compared to the study of Zhao et al. [24], which found that 42.3% of patients undergoing treatment for breast cancer fell into this

Table 3. Factors Influencing the Psychological Distress of Study Participants (*N*=138)

Variables	B	SE	OR	*p*	95% CI
Financial burden (ref: Low)					
Middle	-0.63	0.59	0.53	.289	0.17~1.71
High	1.46	0.63	4.32	.021	1.25~14.97
Depression (ref: no)	0.29	0.68	1.34	.668	0.36~5.03
Fears (ref: no)	1.68	0.59	5.35	.004	1.68~17.00
Nervousness (ref: no)	1.71	0.67	5.50	.011	1.48~20.39
Sadness (ref: no)	0.35	0.58	1.42	.549	0.45~4.43
Worry (ref: no)	-0.05	0.68	0.95	.944	0.25~3.58
Loss of interest in usual activities (ref: no)	-0.50	0.76	0.60	.509	0.14~2.70
Fatigue (ref: no)	-0.05	0.57	0.95	.934	0.31~2.92
Memory/concentration (ref: no)	1.05	0.68	2.87	.121	0.76~10.89
Pain (ref: no)	0.55	0.67	1.73	.414	0.46~6.50
Sleep (ref: no)	0.99	0.63	2.70	.117	0.78~9.31

CI=confidence interval; OR=odds ratio; ref=reference; SE=standard error.

category, and that of Pang et al. [25], which reported that 50.8% of breast cancer survivors experienced moderate to severe distress.

Patients diagnosed with breast cancer often experience significant psychological distress due to life changes brought on by the diagnosis, anxiety about the treatment process, uncertainty about the future, and concerns regarding treatment side effects [5]. Those who suffer from severe psychological distress at the time of diagnosis tend to experience persistently high levels of distress even after survival [16]. Furthermore, psychological distress can adversely affect medical outcomes, including recovery from surgery and the experience of treatment side effects. This underscores the importance of developing practical approaches and strategies to identify psychological distress and manage high-risk patients from the outset [7,14]. Therefore, it is essential to periodically assess the level of psychological distress from the time of cancer diagnosis and provide psychosocial support to mitigate it.

When we conducted logistic regression to identify factors influencing psychological distress in newly diagnosed breast cancer patients, we found that nervousness, fears, and financial burden were significant contributors. These factors differ from those affecting psychological distress in patients who have completed breast cancer treatment, which include age, fatigue, worry, anxiety, depression, and fear of cancer recurrence [22,26,27]. Following a breast cancer diagnosis, psychological distress is shaped by emotional factors such as nervousness and fear, along with financial concerns associated with accepting the diagnosis

and preparing for treatment. In contrast, during or after treatment, psychological distress stems from the physical side effects of treatment, fear of cancer recurrence, and worries about resuming normal life [26,27]. Therefore, psychological support and interventions need to be tailored to the specific needs of patients at each stage.

In this study, nervousness was identified as the strongest factor influencing psychological distress. Patients who responded "yes" to experiencing nervousness were 5.50 times more likely to be categorized within the moderate-severe distress group compared to those who answered "no." This finding aligns with research by Liu et al. [28], which also recognized nervousness as a significant factor affecting psychological distress among newly diagnosed breast cancer patients. Similarly, Ludwigson et al. [5], Mertz et al. [29], and Park et al. [16] reported that nervousness, along with worry, was the most prevalent emotional issue among patients at the time of their breast cancer diagnosis. The diagnosis of cancer is, in itself, an immensely stressful event for patients [12]. Upon diagnosis, patients are faced with the need to accept their condition and formulate treatment plans [28]. Nervousness can adversely impact a patient's ability to manage their health or engage actively in their treatment. Therefore, it is crucial to assess and address nervousness in this group from the outset, possibly through psychological interventions designed to help patients adjust and cope, thereby mitigating negative emotional responses during treatment. Despite its significance, few studies have specifically examined nervousness in newly diagnosed breast cancer patients

[28], highlighting a gap that warrants further investigation.

Next, participants who reported fears were 5.35 times more likely to fall into the moderate-severe psychological distress category compared to those who did not report such issues. Fears, along with worry and anxiety, were identified as the most significant contributors to psychological distress in a study by Ciambella et al. [7], which focused on newly diagnosed breast cancer patients. The diagnosis of cancer and subsequent treatment introduce significant changes in patients' lives [30]. Individuals newly diagnosed with cancer often harbor vague fears concerning their future treatment [31]. Fear, a distressing emotion, naturally arises following a cancer diagnosis [32]. It continues to affect psychological distress not only during treatment but also after the completion of primary treatment for breast cancer [26,27], and it impacts patients' adaptation to and compliance with treatment [32]. Therefore, it is crucial to assess the level of fear, information needs, and other related factors at the time of initial diagnosis and to develop management strategies that effectively support patients throughout their treatment.

Finally, participants who reported a financial burden were 4.32 times more likely to be categorized in the moderate-severe psychological distress group compared to those who reported no burden. These findings are consistent with research by Okeke et al. [17] and Liu et al. [28], which observed that breast cancer patients at diagnosis who were uninsured, unemployed, or facing financial issues experienced increased psychological distress. Patients who encounter financial difficulties prior to diagnosis or who feel burdened by the costs of treatment often suffer adverse outcomes, such as decreased compliance with treatment and delays or avoidance of necessary care [33, 34]. This financial burden continues to affect survivors, diminishing their quality of life even after treatment has ended [35]. Consequently, there is a pressing need to establish referral pathways that provide financial support to cancer patients facing economic hardships [34].

The significance of this study lies in its exploration of psychological distress and associated factors among newly diagnosed breast cancer patients, providing essential data for the development of distress management programs. However, the use of a convenience sample from a single university hospital limits the generalizability of the findings. Future research should investigate the factors related to psychological distress in newly diagnosed breast cancer patients across various regions. The NCCN psychological distress measurement scale, employed in this study, is globally recognized for its simplicity and rapid screening capabilities. However, the PL used for assessing distress factors relies on one-word answers, which constrains the precise identification of the actual problems experienced by patients [17,22]. Subsequent research should utilize instruments that measure psychological distress with a focus on specific details, examining the relationships between psychological distress and factors such as nervousness, fears, and financial burden.

CONCLUSION

In this study, we aimed to investigate the prevalence and influencing factors of psychological distress in newly diagnosed breast cancer patients. We discovered that 67.4% of these patients experienced moderate to severe distress, primarily due to nervousness, fears, and financial burdens. Effective management of psychological distress in patients newly diagnosed with breast cancer necessitates the identification and evaluation of distress levels from the time of diagnosis. It is essential to develop psychological distress management programs that address both emotional aspects, such as nervousness and fears, and personal factors, including economic status.

CONFLICTS OF INTEREST
The authors declared no conflict of interest.

REFERENCES

1. Korean Breast Cancer Society. Breast cancer facts & figures 2022. Seoul: Korean Breast Cancer Society; 2022.

2. National Cancer Information Center. Cancer survival rate [Internet]. Goyang: National Cancer Information Center; 2024

[cited 2024 March 2]. Available from:
http://www.cancer.go.kr/lay1/S1T648C650/contents.do

3. Park JH, Chun MS, Jung YS, Bae SH, Jung YM. Psychoeducational approach to distress management of newly diagnosed patients with breast cancer. Journal of Korean Academy of Nursing. 2018;48(6):669-78.
https://doi.org/10.4040/jkan.2018.48.6.669

4. Syrowatka A, Motulsky A, Kurteva S, Hanley JA, Dixon WG, Meguerditchian AN, et al. Predictors of distress in female breast cancer survivors: a systematic review. Breast Cancer Research and Treatment. 2017;165(2):229-45.
https://doi.org/10.1007/s10549-017-4290-9

5. Ludwigson A, Huynh V, Bronsert M, Sloan K, Murphy C, Christian N, et al. A screening tool identifies high distress in newly diagnosed breast cancer patients. Surgery. 2020;168(5): 935-41. https://doi.org/10.1016/j.surg.2020.04.051

6. Fortin J, Leblanc M, Elgbeili G, Cordova MJ, Marin MF, Brunet A. The mental health impacts of receiving a breast cancer diagnosis: a meta-analysis. British Journal of Cancer. 2021;125(11): 1582-92. https://doi.org/10.1038/s41416-021-01542-3

7. Ciambella CC, Taneja C, Dizon DS, Wiggins DL, Emmick CM, Leonard KL, et al. Distress: characterizing what causes the thermometer to shift in patients with newly diagnosed breast cancer attending a multidisciplinary clinic. Annals of Surgical Oncology. 2019;26(10):3204-9.
https://doi.org/10.1245/s10434-019-07544-z

8. Dinapoli L, Colloca G, Di Capua B, Valentini V. Psychological aspects to consider in breast cancer diagnosis and treatment. Current Oncology Reports. 2021;23(3):38.
https://doi.org/10.1007/s11912-021-01049-3

9. Riba MB, Donovan KA, Andersen B, Braun I, Breitbart WS, Brewer BW, et al. Distress management, version 3.2019, NCCN clinical practice guidelines in oncology. Journal of the National Comprehensive Cancer Network. 2019;17(10):1229-49.
https://doi.org/10.6004/jnccn.2019.0048

10. Abelson JS, Chait A, Shen MJ, Charlson M, Dickerman A, Yeo HL. Sources of distress among patients undergoing surgery for colorectal cancer: a qualitative study. Journal of Surgical Research. 2018;226:140-9.
https://doi.org/10.1016/j.jss.2018.01.017

11. Chen SQ, Liu JE, Zhang ZX, Li Z. Self-acceptance and associated factors among Chinese women with breast cancer. Journal of Clinical Nursing. 2017;26(11-12):1516-23.
https://doi.org/10.1111/jocn.13437

12. Chen SQ, Liu JE, Li Z, Su YL. The process of accepting breast cancer among Chinese women: a grounded theory study. European Journal of Oncology Nursing. 2017;28:77-85.
https://doi.org/10.1016/j.ejon.2017.03.005

13. Gibbons A, Groarke A, Curtis R, Groarke J. The effect of mode of detection of breast cancer on stress and distress. Psycho-

Oncology. 2017;26(6):787-92.
https://doi.org/10.1002/pon.4227

14. Park YS, Yu ES. Screening, assessment, and management of distress in cancer patients. Korean Journal of Clinical Psychology. 2019;38(2):257-74.
https://doi.org/10.15842/kjcp.2019.38.2.010

15. Kang DB, Kim HS, Cho JH, Kim Z, Chung MJ, Lee JE, et al. Prediction model for postoperative quality of life among breast cancer survivors along the survivorship trajectory from pretreatment to 5 years: machine learning-based analysis. Journal of Medical Internet Research Public Health and Surveillance. 2023;9(1):e45212. https://doi.org/10.2196/45212

16. Park JH, Chun M, Jung YS, Bae SH. Predictors of psychological distress trajectories in the first year after a breast cancer diagnosis. Asian Nursing Research. 2017;11(4):268-75.
https://doi.org/10.1016/j.anr.2017.10.003

17. Okeke B, Hillmon C, Jones J, Obanigba G, Obi A, Nkansah M, et al. The relationship of social determinants and distress in newly diagnosed cancer patients. Scientific Reports. 2023;13 (1):2153. https://doi.org/10.1038/s41598-023-29375-5

18. Cai T, Huang Y, Huang Q, Xia H, Yuan C. Symptom trajectories in patients with breast cancer: an integrative review. International Journal of Nursing Sciences. 2022;9(1):120-8.
https://doi.org/10.1016/j.ijnss.2021.12.011

19. Janusek LW, Tell D, Mathews HL. Mindfulness based stress reduction provides psychological benefit and restores immune function of women newly diagnosed with breast cancer: a randomized trial with active control. Brain, Behavior, and Immunity. 2019;80:358-73.
https://doi.org/10.1016/j.bbi.2019.04.012

20. Lally RM, Bellavia G, Gallo S, Kupzyk K, Helgeson V, Brooks C, et al. Feasibility and acceptance of the CaringGuidance web-based, distress self-management, psychoeducational program initiated within 12 weeks of breast cancer diagnosis. Psycho-Oncology. 2019;28(4):888-95.
https://doi.org/10.1002/pon.5038

21. Wallner LP, Li Y, McLeod MC, Hamilton AS, Ward KC, Veenstra CM, et al. Decision-support networks of women newly diagnosed with breast cancer. Cancer. 2017;123(20):3895-903.
https://doi.org/10.1002/cncr.30848

22. Park JH, Bae SH, Chun MS, Jung YS, Jung YM. Factors influencing elevated distress scores at the end of primary treatment of breast cancer. Asian Oncology Nursing. 2015;15(3):132-9.
https://doi.org/10.5388/aon.2015.15.3.132

23. Park SH, Choi HY, Lim WJ, Moon BI, Lim WS. An anxiety, depressed mood, and insomnia in newly diagnosed women breast cancer patients and thyroid cancer patients. Korean Journal of Biological Psychiatry. 2017;24(4):204-11.
https://doi.org/10.22857/KJBP.2017.24.4.005

24. Zhao H, Li X, Zhou C, Wu Y, Li W, Chen L. Psychological dis-

tress among Chinese patients with breast cancer undergoing chemotherapy: concordance between patient and family caregiver reports. Journal of Advanced Nursing. 2022;78(3):750-64. https://doi.org/10.1111/jan.15004

25. Pang L, Li W, Yao S, Jing Y, Yin X, Cheng H. Psychological distress is involved in CRCI in breast cancer survivors via mediating cytokine levels. Cancer Medicine. 2023;12(10):11806-15. https://doi.org/10.1002/cam4.5847

26. Maass SWMC, Boerman LM, Verhaak PFM, Du J, de Bock GH, Berendsen AJ. Long-term psychological distress in breast cancer survivors and their matched controls: a cross-sectional study. Maturitas. 2019;130:6-12. https://doi.org/10.1016/j.maturitas.2019.09.003

27. Rha SY, Park JS, Choi YY, Hong B, Lee J. Fear of cancer recurrence and its predictors and outcomes among cancer survivors: a descriptive correlational study. European Journal of Oncology Nursing. 2022;58:102138. https://doi.org/10.1016/j.ejon.2022.102138

28. Liu L, Sun Y, Zhang Q. Study on the cut-off point and the influencing factors of distress in newly diagnosed breast cancer patients. Frontiers in Psychology. 2024;15:1281469. https://doi.org/10.3389/fpsyg.2024.1281469

29. Mertz BG, Bistrup PE, Johansen C, Dalton SO, Deltour I, Kehlet H, et al. Psychological distress among women with newly diagnosed breast cancer. European Journal of Oncology Nursing. 2012;16(4):439-43. https://doi.org/10.1016/j.ejon.2011.10.001

30. Liu J, Lam KFY, Mahendran R. Psychosocial concerns predict longitudinal trajectories of distress in newly diagnosed cancer patients. Singapore Medical Journal. 2022;63(3):140. https://doi.org/10.11622/smedj.2020122

31. Halbach SM, Enders A, Kowalski C, Pfortner TK, Pfaff H, Wesselmann S, et al. Health literacy and fear of cancer progression in elderly women newly diagnosed with breast cancer-a longitudinal analysis. Patient Education and Counseling. 2016;99(5):855-62. https://doi.org/10.1016/j.pec.2015.12.012

32. Singer S, Blettner M, Kreienberg R, Janni W, Wockel A, Kuhn T, et al. Breast cancer patients' fear of treatment: results from the multicenter longitudinal study BRENDA II. Breast Care. 2015;10(2):95-100. https://doi.org/10.1159/000381933

33. Carrera PM, Kantarjian HM, Blinder VS. The financial burden and distress of patients with cancer: understanding and stepping-up action on the financial toxicity of cancer treatment. CA: A Cancer Journal for Clinicians. 2018;68(2):153-65. https://doi.org/10.3322/caac.21443

34. Lentz R, Benson III AB, Kircher S. Financial toxicity in cancer care: prevalence, causes, consequences, and reduction strategies. Journal of Surgical Oncology. 2019;120(1):85-92. https://doi.org/10.1002/jso.25374

35. Hastert TA, Kyko JM, Reed AR, Harper FW, Beebe-Dimmer JL, Baird TE, et al. Financial hardship and quality of life among African American and white cancer survivors: the role of limiting care due to cost. Cancer Epidemiology, Biomarkers & Prevention. 2019;28(7):1202-11. https://doi.org/10.1158/1055-9965.EPI-18-1336