

Assessment of Psychological Distress and Its Related Factors Among Breast Cancer Patients In A Tertiary Cancer Center of Nepal

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Abstract

Introduction: Breast cancer is the most prevalent cancer and the leading cause of cancer death worldwide. The diagnosis and treatment of breast cancer can be significantly stressful events that cause psychological distress. Worldwide, the prevalence of psychological distress among breast cancer patients was significantly high. But, in the context of Nepal, there was a scarcity of research on psychological distress in breast cancer patients. Therefore, this study aims to investigate the prevalence of psychological distress and its related factors in breast cancer patients

Methods: This cross-sectional study was conducted among 260 breast cancer patients at a tertiary cancer center in Nepal. Psychological distress was assessed by utilizing the NCCN Distress Thermometer along with the Problem List. Descriptive statistics were used to analyze the variables by using SPSS version 22.

Results: The study included a total of 260 women, with an average age of 47.97 ± 11.087 . Almost all respondents (98.1%) were married, and 64.6% lived in joint family structures, with 51.5% of them being illiterate. In addition, 53.7% had been diagnosed within 6 months, and 64.6% were in the early stage of breast cancer. The majority (83.8%) of respondents had experienced a significant level of distress. The most common factors related to distress included fatigue (78.40%), worry (77.10%), pain (72.0%), fear (67.9%), sleep disturbances (66.5%), and sadness (64.2%).

Conclusion: This study indicated that the majority (83.8%) of patients diagnosed with breast cancer at the tertiary cancer center of Nepal experience significant levels of psychological distress. The most prevalent factors related to distress are fatigue, anxiety, pain, fear, and sleep disturbances. It is recommended to implement regular screenings and address the associated factors promptly to alleviate distress and enhance quality of life.

Keywords: Breast cancer, Distress thermometer, Psychological distress

Introduction

Breast cancer is the most prevalent cancer and the leading cause of cancer-related death among women worldwide, with approximately 2.3 million new cases reported in 2022.¹ The diagnosis and treatment of breast cancer can be significantly stressful events.² The International Psycho-Oncology Society (IPOS) recognizes distress as the sixth vital sign.^{3, 4} Cancer-related distress is a multifaceted experience that encompasses not merely sadness or anxiety, but a complex range of interconnected psychological, social, and spiritual challenges.⁵ The psychological distress (PD) experienced by cancer patients differs across countries: 46% in Saudi Arabia.⁶

52% in Germany,⁷ and 75% in India.⁸ In Nepal, the prevalence of psychological distress ranges from 51.8% to 81.7%.⁹⁻¹¹ and female patients tend to report higher levels of distress.^{6, 8-11}

The prevalence of psychological distress among breast cancer patients has varied widely across different geographical regions: 39.0% in Iran,¹² 64.0% in India,¹³ and 67.4% in Korea.¹⁴ Despite this global issue, there is a limited amount of research on psychological distress among breast cancer patients in Nepal. Therefore, this study aims to investigate the prevalence of psychological distress and related factors among breast cancer patients at a tertiary-level cancer center in Nepal.

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Methods

This cross-sectional study was conducted among 260 breast cancer patients receiving treatment at B.P. Koirala Memorial Cancer Hospital (BPKMCH), a tertiary-level comprehensive cancer center of Nepal. The objective of this study was to assess the levels of psychological distress and its related factors among breast cancer patients. The sample size was determined by utilizing the Raosoft sample size calculator, which was based on a prevalence rate of 39%¹¹ with a margin of error of 5% and a confidence level of 95%. The calculated sample size of 230 was increased by 10% to account for non-response, resulting in a final sample of 260 patients. The purposive sampling technique was utilized to choose the participants. The eligibility criteria for this study encompassed patients diagnosed with histologically confirmed breast cancer. Male patients with breast cancer and individuals undergoing psychiatric treatment were excluded. Data was gathered from various departments: the surgical oncology ward, the medical oncology ward, the daycare unit, and the radiation oncology department.

A structured interview schedule was used to assess the patients' socio-demographic characteristics, whereas clinical profiles were obtained from patient records. Psychological distress was evaluated using the NCCN distress thermometer (DT) along with the problem list.⁵ The DT consists of a single-item visual analogue scale (0-10) measuring psychological distress experienced during the past week. The scores range from 0 (no distress) to 10 (extreme distress), where a score of ≥ 4 signifies significant distress; scores between 4 and 7 reflect moderate distress, while scores of ≥ 8 denote severe distress. The problem list (PL) comprises 39 items across five categories: practical problems (6 items), family problems (4 items), emotional problems (6 items), physical problems (22 items), and spiritual/religious problems (1 item). The clinical utility of this tool for breast cancer patients has been established,¹⁵ and it was previously validated in 2019 at the same setting.¹¹

Ethical clearance was obtained from the Institutional Review Committee (IRC) of BPKMCH. Written informed consent was taken from each and every respondent. Furthermore, respondents were requested to indicate if they had experienced each

problem during the past week by choosing either "yes" or "no." The medical records of the patients were examined to gather details such as disease stage, duration since diagnosis, and treatment status. The Statistical Package for the Social Sciences (SPSS) version 22 was used for analyzing the data. Descriptive and inferential statistics were performed at the significance level set at $p < 0.05$.

Results

Sociodemographic and Clinical Characteristics

Out of 260 respondents, the majority (61.2%) were in the age group below 50 years, with a mean age of 47.97 ± 11.087 . More than half (51.5%) were illiterate, and 66 (25.4%) had completed secondary level and higher. Nearly all respondents (98.1%) were married, and 64.6% lived in joint family structures. Only 17.3% reported having a family history of cancer, while 29.6% had comorbid conditions.

Regarding the time since diagnosis, 53.7% of respondents had been diagnosed within the past 6 months, 33.8% between 6 and 12 months, and 13.5% had been diagnosed more than 12 months. Additionally, more than half (64.6%) of respondents were presented with early-stage breast cancer (stages I and II). Likewise, the majority (78.1%) of respondents underwent chemotherapy, 75.4% surgery, 23.8% radiation therapy, and only 6.9% of respondents had undergone biotherapy. Similarly, a significant majority (78.1%) of respondents had received chemotherapy, 75.4% underwent surgery, 23.8% received radiation therapy, and merely 6.9% of respondents had biotherapy. Among the 196 respondents who underwent surgery, two-thirds (65.6%) had a modified radical mastectomy. (**Table 1**)

Distress Level and Related Factors

The present study revealed that out of a total of 260 respondents, 83.8% of respondents reported a significant level of distress as recommended by NCCN (≥ 4 score).⁵ Out of them, 80% experienced moderate distress, and 3.8% severe distress. The mean distress score was 5.17 ± 1.539 , ranging from 1 to 9. (**Table 2**)

The findings of this study also indicated that, among the five categories of the problem list, psychological issues comprised 54.7%, followed by practical

issues at 36.8%, physical issues at 30.8%, and family issues at 14.3%. In contrast, spiritual or religious concerns were significantly high at 63.8%, despite being represented by only one item. **(Table 3)**

Moreover, in the assessment of the sub-categories of problem lists, within the five items of the psychological domain, the four most frequently reported issues were worry, fear, sadness, and a lack of interest. Regarding the practical problems, out of six items, the two most frequently reported problems were financial issues and transportation difficulties. Likewise, within the physical domain, three of the twenty-two items, the most common issues were fatigue, pain, and sleep disturbances. In contrast, less than 15.0% of respondents reported family problems. Spiritual and religious concerns were notably high, with only one item where respondents answered yes. Additionally, an analysis of the 39 items on the problem list revealed that the 10 most prevalent issues included fatigue (78.40%), worry (77.10%), pain (72.0%), fear (67.9%), sleep disturbances (66.5%), sadness (64.2%), spiritual or religious concerns (63.80%), financial and transportation challenges (58.30%), and loss of interest (55.0%). **(Figure 1)**

Association between Distress Levels and Selected Variables

In this study, a significant association was found only with levels of distress and comorbidity. However, no significant association was found between distress levels and other variables. **(Table 4)**

Table 2: Distress Level among Breast Cancer Patients n=260

Distress score	No	Percent	Mean $\pm$ SD	Range
1-3 (mild)	42	16.2	5.17 $\pm$ 1.539	1-9
4-7 (moderate)	208	80.0		
8-10 (severe)	10	3.8		

Table 3: Distributions of Risk Respondents (≥ 4 score) by PL Categories n=218

PL categories	Percent
Practical problems	36.8
Family problems	14.6
Psychological problems	54.7
Physical problems	30.8
Spiritual/religious concern	63.8

Table 1: Socio-demographic and Clinical Characteristics of Respondents (n=260)

Variables	No	Percent
Age in years		
< 50years	159	61.2
> 50years	101	38.8
Educational level		
Illiterate	134	51.5
Primary level	60	23.1
Secondary and above	66	25.4
Marital status		
Married	255	98.1
Unmarried	5	1.9
Family structure		
Joint	168	64.6
Nuclear	92	35.4
Comorbidity		
Yes	77	29.6
No	183	70.4
Family history of cancer		
Yes	45	17.3
No	215	82.7
Duration of diagnosis		
< 6 months	137	53.7
1-1 months	88	33.8
> 12 months	35	13.5
Stages of cancer		
Early stage (I & II)	168	64.6
Late stage (III, IV & recurrence)	92	35.4
Treatment modalities *		
Surgery	196	75.4
Chemotherapy	203	78.1
Radiation therapy	62	23.8
Bio/hormonal therapy	18	6.9
Types of surgery (196)		
Modify radical mastectomy	168	85.7
Breast conserving surgery	25	12.8
Simple mastectomy	3	1.5

* Multiple responses

Discussion

This cross-sectional study examined the prevalence and associated factors of psychological distress among breast cancer patients. The majority (63.3%) of respondents were under the age of 50, with an average age of 47.97 ± 11.087 years. This result aligns closely with findings from India, where the mean age was 48.1 years,¹³ but it is lower than in Korea, where the mean age was 51.7 years.¹⁴ Likewise, the systematic review and meta-analysis also revealed a positive correlation between younger age and psychological distress in breast cancer patients.¹⁸ Almost all (98.2%) of the respondents were married, and 139, representing 63.8%, resided

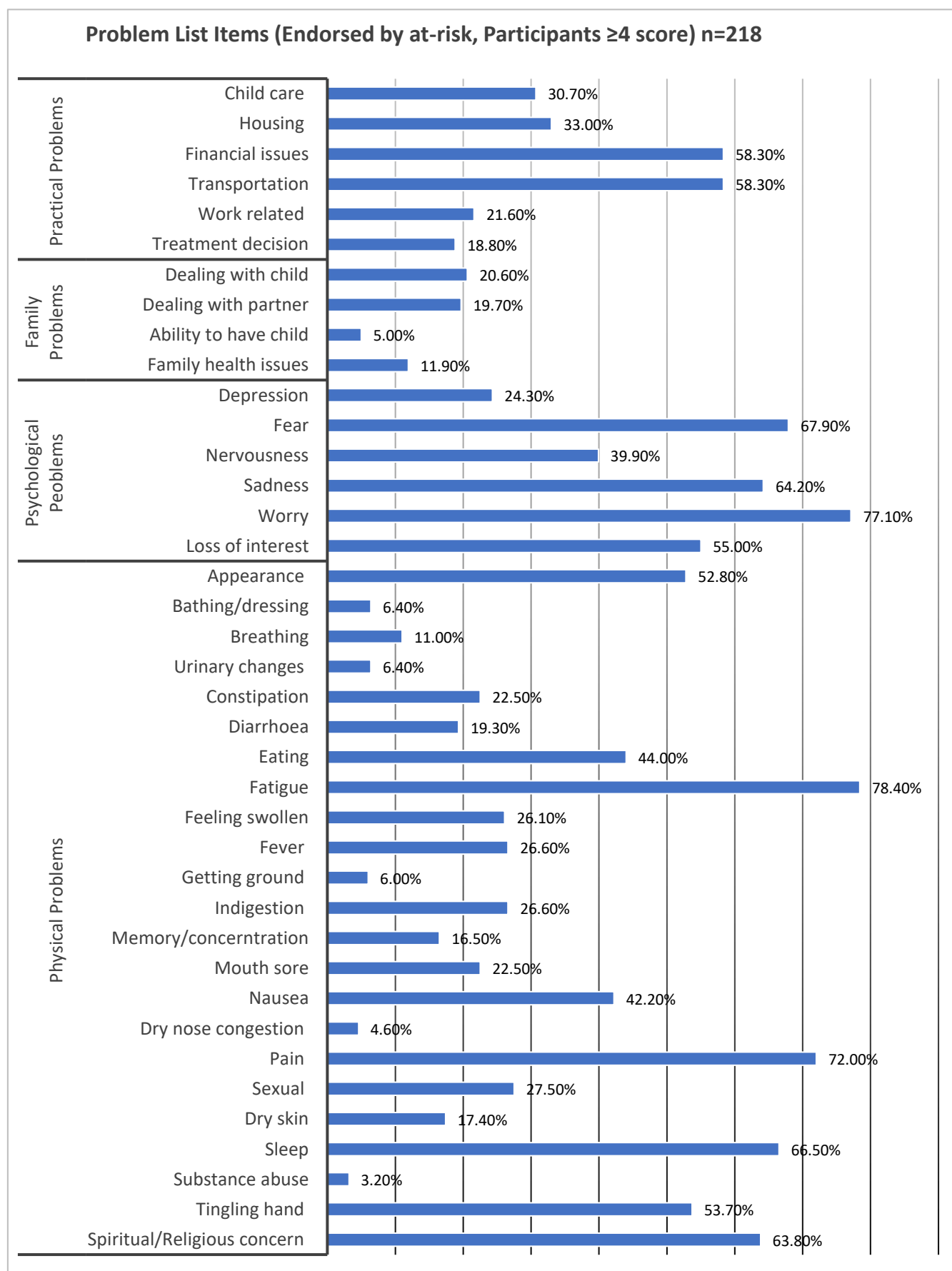


Table 4: Association between Level of Distress with Selected Variables (n=260)

Variables	Level of Distress		χ^2	p-value
	<4 Score	≥ 4 Score		
	No. (%)	No. (%)		
Age in Years				
< 50	21(13.20)	138 (86.80)	2.623	0.105
> 50	21(20.80)	80(79.21)		
Ethnicity				
Brahmin/Chhetri	13(14.9)	74(85.1)	5.304	0.258
Janajati	13(16.7)	65(83.3)		
Madeshi	12(25.0)	36(75.0)		
Dalit	3(11.5)	23(88.5)		
Others	1(4.8)	20(95.2)	2.183	0.336
Educational level				
Illiterate	24(17.91)	110(82.09)	0.056	0.813
Primary level	6(10.00)	54(90.00)		
Secondary level or above	12(18.18)	54(81.82)		
Marital status				
Married	41(16.08)	214(83.92)	0.560	0.756
Unmarried	1(20.00)	4(80.00)		
Family structure				
Joint	29(17.26)	139(82.74)	1.145	0.564
Nuclear	13(14.13)	79(85.87)		
Comorbidity				
Yes	19 (24.7)	58(75.5)	5.865	0.104*
No	23(11.9)	160(82.9)		
Duration of diagnosis				
Less than 6 months	25(3.65)	112(81.75)	1.145	0.564
6-12 months	13(14.77)	75(85.23)		
More than 12 months	4(11.43)	31(88.57)		
Stage of cancer				
Early stage (I & II)	24(14.28)	144(85.72)	1.223	0.269
Late stage (III, IV & recurrence)	18(19.57)	74(80.43)		

*Level of significance = <0.05

in joint families. Similar results were found in India, where 96.0% of women were married. This study's findings revealed that 73.4% of respondents had no history of comorbidity; a similar result was also shown in Korea, where 63.0% of respondents had an absence of comorbidities.¹⁴ Concerning the clinical characteristics, around half (51.4%) of the respondents had been diagnosed within 6 months, 33.8% between 6 and 12 months, and only 14.2% were diagnosed over 12 months. Furthermore,

66.1% of respondents were diagnosed with early-stage breast cancer (stages I and II); this figure was lower than the findings of the study conducted in India, where 91.0% of respondents had early-stage disease.¹³

Similarly, the prevalence of PD among breast cancer patients in this research was 83.8% with a mean distress score of 5.17 ± 1.539 (with a range of 1-9). This finding is higher than the previous studies carried out in various geographical locations, in Iran at 39.0%, India at 64.0%, and Korea at 67.4%, respectively.¹²⁻¹⁴ Furthermore, a similar finding (81.7%) was found in a previous study conducted in the same setting, but the study population consisted of various types of cancer.¹¹ The systematic review and meta-analysis revealed that the pooled prevalence rate was 50% PD among patients with breast cancer.¹⁸ Similarly, another review also showed an overall prevalence of PD was 52.0%.¹⁹

The current study also identified that the factors most frequently associated with psychological distress include fatigue, anxiety, pain, fear, sleep disturbances, challenges in transportation, and a loss of interest in activities. These results align with previous studies conducted in Iran, which highlighted fatigue, pain, anxiety, and sadness, as well as research in Korea, where worry, fatigue, fear, and sadness were identified as the predominant issues related to psychological distress among breast cancer patients.¹⁴

In this current study, comorbidity was the only variable significantly associated with distress levels, while no association was found with other demographic or clinical characteristics. These findings were consistent with previous research conducted in the USA.¹⁵

Conclusion

This study indicated that the majority (83.8%) of patients diagnosed with breast cancer at the tertiary cancer center of Nepal experience significant levels of psychological distress. The most prevalent factors related to distress are fatigue, anxiety, pain, fear, and sleep disturbances. It is recommended to implement regular screenings and address the associated factors promptly to alleviate distress and enhance quality of life.

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References

- Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, Jemal A. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: a cancer journal for clinicians*. 2024 May; 74(3):229-63. <https://doi.org/10.3322/caac.21834>
- Alagizy HA, Soltan MR, Soliman SS, Hegazy NN, Gohar SF. Anxiety, depression and perceived stress among breast cancer patients: single institute experience. *Middle East Current Psychiatry*. 2020 Dec; 27:1-0. <http://dx.doi.org/10.1186/s43045-020-00036-x>
- Bultz BD, Johansen C. Screening for distress, the 6th vital sign: Where are we, and where are we going? *Psychooncology* 2011;20:56971. <https://doi.org/10.1002/pon.1986>
- Holland JC, Bultz BD: The NCCN guideline for distress management: A case for making distress the sixth vital sign. *J Natl Compr Canc Netw* 5:3-7, 2007
- Riba MB, Donovan KA, Andersen B, Braun I, Breitbart WS, Brewer BW, Buchmann LO, Clark MM, Collins M, Corbett C, Fleishman S. Distress management, version 3.2019, NCCN clinical practice guidelines in oncology. *Journal of the National Comprehensive Cancer Network*. 2019 Oct 1;17(10):1229-49. <https://doi.org/10.6004/jnccn.2019.0048>
- Alsughayer LY, Altamimi LA, Alsaleh FS, Lamy A, Ibrahim A, Abdel-Aziz NM, Alsaleh KA, Alosaimi FD. Prevalence and determinants of distress among oncology patients at a tertiary care medical city in Riyadh, Saudi Arabia. *Saudi Medical Journal*. 2021 Jul 1;42(7):761-8 <https://doi.org/10.15537/smj.2021.42.7.20210121>
- Mehnert A, Hartung TJ, Friedrich M, Vehling S, Brähler E, Härter M, Keller M, Schulz H, Wegscheider K, Weis J, Koch U. One in two cancer patients is significantly distressed: prevalence and indicators of distress. *Psycho-oncology*. 2018 Jan;27(1):75-82. <https://doi.org/10.1002/pon.4464>
- Pooja, S., Savatagi, S., Sengupta, A. and Jayanna, K., 2023. Assessment of psychological distress and its association with socio-demographic variables among cancer patients in a tertiary care hospital in Bengaluru, Karnataka: a cross sectional study. *International Journal of Community Medicine and Public Health*, 10(9), p.3358. <https://doi.org/10.18203/2394-6040.ijcmph20232704>
- Prajapati R, Thapa S, Pokhrel S, Sharma R, Thapa P. Understanding Psychosocial Distress and the Distressing Items on the Distress Thermometer Problem List: A cross-sectional Study from Nepal. *Annapurna Journal of Health Sciences*. 2023 Aug 9;3(2).
- Paudel B, Paudel BD, Mishra R, Karki O, Shahi R, Poudyal BS. Distress Screening among Patients with Hematological Malignancies: A Descriptive Cross-sectional Study. *JNMA J Nepal Med Assoc*. 2020 Aug;58(228):560-3. <https://doi.org/10.31729/jnma.5194>
- Sah GS. Psychosocial and Functional Distress of Cancer Patients in A Tertiary Care Hospital: A Descriptive Cross-sectional Study. *Journal of the Nepal Medical Association*. 2019 Jul 1; 57(218). <https://doi.org/10.31729/jnma.4491>
- Saeedi-Saedi H, Shahidsales S, Koochak-Pour M, Sabahi E, Moridi I. Evaluation of emotional distress in breast cancer patients. *Iranian journal of cancer prevention*. 2015 Jan; 8(1):36. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4360349/pdf/IJCP-08-036.pdf>
- Shejila CH, Pai MS, Fernandes DJ, Mathew S, Chakrabarty J, Devi ES, George A. Psychological impact of cancer diagnosis in newly diagnosed breast cancer patients. *Indian Journal of Public Health*. 2017 Jul 1;8(3). <http://dx.doi.org/10.5958/0976-5506.2017.00167.X>
- Park JH, Jung YS, Hur MH, Jeong YJ. Psychological Distress and Influencing Factors in Newly Diagnosed Patients with Breast Cancer: A Cross-Sectional Study. *Korean Journal of Adult Nursing*. 2024 Nov 1;36(4):311-9. <https://doi.org/10.7475/kjan.2024.36.4.311>
- Dabrowski M, Boucher K, Ward JH, Lovell MM, Sandre A, Bloch J, Carlquist L, Porter M, Norman L, Buys SS. Clinical experience with the NCCN distress thermometer in breast cancer patients. *Journal of the National Comprehensive Cancer Network*. 2007 Jan 1;5(1):104-11. <https://doi.org/10.6004/jnccn.2007.0011>
- Park JH, Chun M, Bae SH, Woo J, Chon E, Kim HJ. Factors influencing psychological distress among breast cancer survivors using machine learning techniques. *Scientific Reports*. 2024 Jul 1;14(1):15052. <https://doi.org/10.1038/s41598-024-65132-y>
- 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 Dec 1;11(4):268-75. <https://doi.org/10.1016/j.anr.2017.10.003>
- Tang WZ, Mangantig E, Iskandar YH, Cheng SL, Yusuf A, Jia K. Prevalence and associated factors of psychological distress among patients with breast cancer: A systematic review and meta-analysis. *BMJ open*. 2024 Sep 1;14(9):e077067. <https://doi.org/10.1136/bmjopen-2023-077067>
- Tao L, Xiang Y, Zeng X, Fu L, Li J, Chen H. Incidence and risk factors for psychological distress in adult female patients with breast cancer: a systematic review and meta-analysis. *Frontiers in Psychiatry*. 2024 Mar 13; 15:1309702. <https://doi.org/10.3389/fpsy.2024.1309702>
- Taghizadeh A, Pourali L, Vaziri Z, Saedi HR, Behdani F, Amel R. Psychological distress in cancer patients. *Middle East Journal of Cancer*. 2018 Apr 1;9(2):143-9. <https://doi.org/10.30476/mejc.2018.42116>