RESEARCH
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"SOCIO DEMOGRAPHIC, CLINICAL AND PSYCHOSOCIAL DETERMINANTS AFFECTING PSYCHOLOGICAL WELLBEING OF WOMEN WITH BREAST CANCER- A CROSS SECTIONAL STUDY AT BAGALKOT."

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Abstract
Title of the study: Socio demographic, clinical and psychosocial determinants affecting Psychological Wellbeing of women with breast cancer- a cross sectional study at Bagalkot.
Background: Considering the chronic nature of cancer and its significant effect on Psychological Wellbeing of women, the present study was conducted to evaluate psychosocial determinants affecting Psychological Wellbeing of women with breast cancer in order to facilitate planning health promotion intervention programs. **Aims:** Socio demographic, clinical and psychosocial determinants affecting Psychological Wellbeing of women with breast cancer**. Settings and Design:** This cross-sectional study included a sample of 100 women with breast cancer attending oncology units of selected hospitals of Bagalkot. **Methods and Material:** Data were collected using self-report method and Hospital's records. Tools used for data collection were; socio-demographic and clinical questionnaire, Ryff's scale of Psychological Wellbeing, Centre for Epidemiologic Studies Depression Scale (CES-D Scale) and Social Provision Scale (SPS). Multiple linear regression analysis was performed to find the psychosocial determinants affecting Psychological Wellbeing of women with breast cancer. **Results:** A significant regression equation was found (($F_{16,99=}$ 4.5, R^2=0.46, P=0.000) when all the variables are considered together for finding the psychosocial determinants affecting Psychological Wellbeing. Social Support has positively predicted the Psychological Wellbeing of women with breast cancer and other therapies has negatively predicted the Psychological Wellbeing of women with breast cancer. Depression was the strongest negative predictor of Psychological Wellbeing of women with breast cancer ((β**=**--0.170, P<0.001). **Conclusions:** Interventions aimed at management of depression among women with breast cancer attending the oncology units of selected hospitals of Bagalkot would result in enhancement their Psychological Wellbeing.

Keywords: Socio-demographic, Clinical, Psychosocial determinants, Psychological Wellbeing, Women with breast cancer.

Introduction:

Health is the common benefit of all people, as well as the wealth of people and people. Although the focus of modern medicine has always been away from disease, there is now a s hift towards the importance of prevention and health promotion . Public health data show that the global burden of female breas t cancer, measured by morbidity, mortality, and economic costs , is significant and increasing. It is estimated that more than 1 million women are diagnosed with breast cancer each year wor ldwide and more than 410,000 will die from the disease. World wide, a woman is diagnosed with breast cancer every three min utes and there are one million cases each year.[1]

Breast cancer is a global health problem and the leadin g cause of death for women worldwide. It is estimated that mor e than 1 million women are diagnosed with breast cancer each year worldwide and more than 410,000 people will die from br east cancer. Cancer Facts shows that the age-specific incidence of breast cancer in India is 22.9 per 100,000 people, onethird that of Western countries, and the mortality rat e is disproportionately high. Breast cancer accounts for 22.2% of all new breast cancer diagnoses and 17.2% of all breast canc er cases among Indian women. Breast cancer rates in urban Ind ia are three times higher than in rural areas.[2]

It is the second most common cancer in women in Ind ia. It is estimated that approximately 80,000 cases occur each y ear. The age-standardized incidence of breast cancer in Indian women is 22. 9 and the number of deaths is 11,194. Currently, approximately 1 in 26 women will be diagnosed with breast cancer in her lifet ime. According to Indian statistics, there are approximately 115 ,000 new cases of cancer every year and this number is expecte d to increase to 250,000 cases every year by 2015. The most co mmon tests for early detection are breast self-examination and mammography. This study shows that breast c ancer deaths in women aged 50 and over are reduced by 30%.[3]

Cancer cases will be higher among women in Karnata ka in 2022. According to National Cancer Registry Program da ta, a total of 47,806 women were diagnosed with breast cancer last year, while this number was diagnosed in 42,543 men.[4]

The prevalence of mental illnesses in cancer patients v aries between 29% and 47%. Mental illnesses include severe an xiety, mood swings, depression and other neuroses. The author s noted that psychological disorders in the context of breast can cer can affect the disease, treatment and success, social quality and performance, and survival.[5]

Methods: It was a cross sectional study included a sample of 100 women with breast cancer attending oncology units of selected hospitals of Bagalkot. A sample was selected by Purposive sampling technique. The final Sample size was determined with the help of power analysis using data from pilot study. As the number of determinants included in the study is 18 and 10 to 15 women with breast cancer visit at oncology units of selected hospitals of Bagalkot everyday considering this in order to improve the credibility of predictor analysis sample size for the present study was 100. **Study participants:** The study participants were women with breast cancer aged between 19-64 years at selected hospitals of Bagalkot. The sampling criteria included the women with breast cancer visit at oncology units of selected hospitals of Bagalkot. Women with breast cancer immediately following the completion of initial primary treatments with surgery, radiation and/or chemotherapy within one month of enrolment into the study, Women aged between 19–64 years diagnosed with first primary, pathology-confirmed stage I-IV breast cancers, who will give written consent to participate, Patients without any problems such as recurrence, or metastasis and who could communicate and complete a questionnaire. Patients who suffering with other types of cancer, those with mental instability, Patients who are too sick and hence unable to provide data and those not willing to participate in the study were excluded from enrolment in study sample. **Sample size calculation:** The final Sample size was determined with the help of power analysis. The sample size was calculated considering the following criteria, Z = 1.96 (95% confidence level), margin of error (e) =5% (0.05), Population proportion (P) = 0.5. The population of women with breast cancer in Karnataka was considered around 29.5%. The calculated sample size was 88.36. The researcher enrolled 100 subjects and data was obtained from 100 subjects. **Setting of the study:** The study was conducted at the Oncology units of selected Hospitals of Bagalkot. HSK Hospital and research centre Bagalkot, Halamma Kerudi Cancer hospital, Navanagar, Bagalkot. The researcher enrolled 100 women with breast cancer from the selected hospital. **Data collection Instrument:** The data regarding depression is to assess the depression among the women with breast cancer which consists of 20 items. It is developed by Center for Epidemiological Research Studies. Anxiety among patients with ESRD was measured using General Anxiety Disorder: 7 Scale which has got 7 items. Social support among women with breast cancer was measured using social provision scale which has got 24 items. All items are answered on a 1 to 4 response. Psychological wellbeing was measured using Ryff's scale, a 14-item scale and it is 7-point scale that assesses the psychological wellbeing among women with breast cancer. **Validity, reliability and translation of data collection instruments:** Ryff's Wellbeing scale has been widely used in many Indian languages including Kannada with very high reliability (Chronbach's α 0.907). Reliability for the Kannada translated tool in the present study was established by Test-retest method and split-half method. In Test-retest method, the 7 days gap was given between the tests and correlation between the scores was calculated by using Cronbach's alpha value. Internal consistency was established by using split-half method, since there are 31items in the tool, 'Spearman-Brown r' for unequal length was calculated. Reliability established for Kannada tool Cronbach's α (Test-retest method) is 0.936, Spearman – Brown (Split-half method) is 0.913. which indicates the tool is highly reliable. Center Epidemiological Research Studies- Depression Scale was (CES-D) is highly reliable with high internal consistency with Cronbach's alpha ranging between 0.88- 0.97. CES-D has been widely used in Indian setting also especially in women with breast cancer researches with high internal consistency. Reliability for the Kannada translated tool in the present study was established by Test-retest method and split-half method. Reliability established for Kannada tool Cronbach's α (Test-retest method) is 0.922, Spearman – Brown (Split-half method) is 0.946. which indicates the tool is highly reliable. The Social Provision Scale (SPS) for assessment of social support. Reliability for the Kannada translated tool in the present study was established by Test-retest method and split-half method. Reliability established for Kannada tool Cronbach's α (Test-retest method) is 0.904, Spearman – Brown (Split-half method) is 0.938. which indicates the tool is highly reliable, suggesting the tool was reliable for data collection.

Ethical clearance: Ethical clearance certificate was obtained from Institutional ethical clearance committee, B.V.V.S

Sajjalashree Institute of Nursing sciences, Bagalkot (ref No. BVVSSIONS-IEC/2022/23/1921. Dt: 28/02/2023) Written consent of participation was obtained from participants and their parents before data collection.

Statistical analysis: the data was analysed using SPSS version 25. The obtained data was entered in MS excel sheet. The data was edited for accuracy and completeness. The categorical responses were coded with numerical codes. The data was presented with frequency and percentage distribution tables and diagrams. Frequency and percentage distribution were used for analysis of socio demographic and clinical characteristics. The description of women with breast cancer was presented with mean, standard deviation of Psychosocial factors (Depression. Social Support) and psychological wellbeing scores of women with breast cancer Multiple linear regression analysis to find predictors of Psychosocial Factors and psychological wellbeing among women with breast cancer.

Data collection Procedure: The data was collected study was conducted from 01-01-2024 to 20-02-2024 among 100 women with breast cancer. Prior formal administrative approval from the Principal of Sajjalashree institute of nursing sciences, Bagalkot. Obtained approval from institutional ethical clearance committee. Obtained administrative approval from concerned authorities of oncology units of selected hospitals of Bagalkot. All the participants were explained about the purpose of study and that the data or information provided from them will be kept confidential and their identity will not be revealed.Written with permission from women with breast canc er. Psychosocial determinants and psychological evaluation in women with breast cancer. The tool is available as per preferre d language (English or Kannada). Details of the data collection tools are explained. The researcher understood and clarified par ticipants' concerns during data collection. The instrument was c ollected by the participants. Women spend an average of 20 to 30 minutes filling the device, and the entire process is complete d within an hour. The researchers thank all participants.

Results: The percentage wise distribution the sample percentage by age showed that the majo rity of women with breast cancer (42%) were between the ages of 55-
64. 90% of women with breast cancer are Hindu. It appears tha t women with breast cancer (66%) are illiterate. 88% of women with breast cancer are married. (28%) Cancer women are hous ewives and farmers. The area of
residence (51%) was found to be from the urban area. (28%) C ancer women are housewives and farmers. Monthly income of (69%) is less than 10,000/-
. Women with breast cancer (56%) are from nuclear families. A s for children (37%), they have 2 children. 54% of women with breast cancer can take good care of themselves. 80% of wome n with breast cancer have no family history of cancer. Women with breast cancer (78%) have no bad habits.

Table 1: Socio demographic and clinical characteristics of patient suffering with breast cancer

Sl . No	Socio demographic Variables	F	Percentage
1	**Age (Years)**		
	19-34 years	5	5%
	35-44 years	19	19%
	45-54 years	34	34%
	55-64 years	42	42%
2	**Religion**		
	Hindu	91	91%
	Muslim	9	9**%**
	Christian	0	0%
	Others	0	0%
3	**Educational status**		
	Illiterate	66	66%
	Upto 10^{th}	22	22%
	PUC	9	9%
	Degree and above	3	3%
4	**Marital status**		
	Married	88	88%
	Unmarried	6	6%
	Widow/widower	5	5%
	Divorced/others	1	1%
5	**Area of residence**		
	Urban	51	51%
	Rural	49	49%
6	**Occupation**		
	House wife	28	28%
	Agriculture	28	28%
	Coolie	20	20%
	Employee	5	5%
	Self employed	19	19%
7	**Family monthly income**		
	Less than 10000	69	69%
	10000 – 20000	21	21%
	20000 - 30000	6	6%

	Above 30000	4	4%
8	**Type of family**		
	Nuclear	56	56%
	Joint	39	39%
	Extended	5	5%
9	**Number of children**		
	No children	16	16%
	1	14	14%
	2	37	37%
	3 and above	33	33%
10	**Self-care ability**		
	Poor	16	16%
	Average	30	30%
	Good	54	54%
11	**Family history of cancer**		
	Yes	20	20%
	No	80	80%
12	**Any bad habits present (Alcoholism/Smoking/tobacco chewing)**		
	Yes	22	22%
	No	78	78%

Clinical Variables			
SL.No	**Variables**	**Frequency**	**Percentage**
1	**Stages of cancer**		
	Stage 1	3	3%
	Stage 2	38	38%
	Stage 3	42	42%
	Stage 4	17	17%
2	**Present chemotherapy cycle**		
	0	18	18%
	1	16	16%
	2	22	22%
	3	15	15%
	4 and above	29	29%
3	**Radiation therapy**		
	Yes	5	5%
	No	95	95%
4	**Other therapies**		
	Targeted cell therapy	14	14%
	Immunotherapy	6	6%
	Others	80	80%
5	**Duration of disease condition**		
	0-2 years	93	93%
	3-4 years	7	7%
	5 years and above	0	0%
6	**Any other disease (DM/HTN)**		
	Yes	6	6%
	No	94	94%

Abbreviations: **F**: Frequency, **%**: Percentage

Part- II: Assessment of psychological wellbeing among women with breast cancer

When the distribution of women with breast cancer w as examined according to their health status, it was seen that 51 % had good mental health, 48% had moderate mental health, a nd 1% had mental health problems.

The mean, SD, of psychological wellbeing of women with breast cancer is is 85.67±14.86.

Part -III: Description of psychosocial determinants (Depression and Social Support) among women with breast cancer.

The classification model based on depression level sh owed that the majority of women with breast cancer (55%) exp erienced severe depression during treatment, while (45%) expe rienced mild depression or no depression at all. The mean and s tandard deviation of depression in women with cancer is 18.05 ± 9.13.

The distribution pattern by level of social support showed that most women with breast cancer (79%) had high levels of suppo rt and 21% still had relationship building support. The mean an d standard deviation of social support for women with cancer is 73.52 ± 13.22.

Part IV: Multiple linear regression analysis to find the determinants affecting psychological wellbeing of women with breast cancer.

A significant equation was found (F16.99 = 4.5, R2 = 0.46, P = 0.000). Social support and other wellbeing predict me ntal health in women with breast cancer. Depression was the str ongest predictor of negative mental health in women with breas t cancer (β=-0.170, P<0.001).

Discussion:

A cross sectional study was conducted to determine the socio demographic, clinical and psychosocial determinants affecting Psychological Wellbeing of women with breast cancer. Study conducted at Hanagal Shri Kumareshwar Hospital and Research Centre, Bagalkot and Halamma Kerudi Cancer Hospital, Bagalkot. The sociodemographic data and determinants were assessed by using a structured close ended questionnaire prepared by researcher. Dividing the sample percentage by age showed that the majorit y of women with breast cancer (42%) were between the ages of 55-
64. The findings of this research **Sofi, Nighat Yaseen; Jain, M onica; Kapil, Umesh et al.** In the National Capital Region of I ndia. Women are most affected by breast cancer, 88% of whom are in the 35-
65 age group.[6]Most (90%) women with breast cancer are Hind u. The results of this study were followed and supported by a st udy by **Sarkar S, Ghosh D, Mahata S, Sahoo PK, Roy A, Ve rnekar M, et al**. in Calcutta. The majority of women with breast cancer (90.7 %) are Hindu7. Most women with breast cancer (66%) are illite rate. The findings of this research **Sofi, Nighat Yaseen; Jain, Monica; Kapil, Umesh et al.** In the National Capital Region o f India. The majority of women with breast cancer (53%) are ill iterate or have only primary education. Most women with breas t cancer (88%) are married. The results of this study were follo wed up and supported by a study by **Olarewaju SO, Oyekunle EO, Bamiro AO, Nigeria.** Among women diagnosed with bre ast cancer, married women have the highest rate with 70.2 perc ent. Out of the total women diagnosed with breast cancer, the highest proportion (28%) were found to be housewives and agriculture workers. Furthermore, the analysis of the distribution of women with breast cancer based on their place of residence indicated that the majority (51%) hailed from urban areas. These results align with a study conducted in China by **Chen S, Liu Y, Fong DYT, Zhou J, Chen H, and Wan C.** It was also noted that a significant portion (45.5%) of women with breast cancer were employed in the agriculture sector, in line with the findings of the aforementioned study.[9]. The majority (69%) of participants had a monthly income of less than 10,000/-. Among women with breast cancer, most (56%) belonged to nuclear families and had 2 children (37%). A large portion (54%) of these women demonstrated good self-care ability. These results align with a study conducted in Malaysia by **Ali R, Draman N, Mohd Yusoff SS, and Norsa'adah B.** The majority (83.67%) of women with breast cancer in this study also had good self-care ability.[10] The study conducted by **Mansha M, Saleem M, Wasim M, Tariq M.** at Punjab found that the majority (80%) of women with breast cancer did not have a family history of the disease. These results are in line with the findings of our present study.[11] The vast majority (78%) of women diagnosed with breast cancer did not report any negative habits. These results are in line with a study carried out by **Almeida Marques Bernabé, R., de Souza Vieira, M., Felício de Souza V, et al.** in Europe. Similarly, a significant majority (71%) of breast cancer patients in this study also did not have any bad habits.[12] Most of the girls with breast cancer (51%) have excellent psychosocial well-being. Findings of the present take a look at are regular and supported with the take a look at carried out by way of **Deledda G, Poli S, Giansante M, Zamboni M, Turazza M, Gori S.** Most of the girls with breast cancer have a excessive properly-being[13]. The Mean, SD of psychosocial wellbeing of women with breast cancer is 85.67±14.86. Findings of the existing study are constant and supported with the observe conducted with the aid of **Devarakonda SK, Timman R, Bouvy PF, Oemraw singh A, Apon I, Mureau MAM, et al.** the overall mental wellness mean and SD of the women with breast cancer rating is 69.5±18.7.[14] Most women with breast cancer (55%) experience major depre ssion. The results of this study were followed and supported by research by **Abu
Helalah M, Mustafa H, Alshraideh H, Alsuhail AI, A Almo usily O, Al-
Abdallah R, et al.** Most women with breast cancer (57%) expe rience mild to severe depression[15]. The mean and SD of depression in women with cancer was 18.05 ± 9.13. The results of this study were followed and supported by resear ch by **Dewan, Mashael F, Lyons, Karen S, MinKyoung,** Has souneh, Dena. The mean and standard deviation of the depressi on total score in women with cancer were 20.52 ± 12.36.[16]The majority of women with breast cancer (79%) reported social su pport. The results of this study **Abu-
Helalah M, Mustafa H, Alshraideh H, Alsuhail AI, A Almo usily O, Al-
Abdallah R, et al.** It is not consistent with and does not suppor t the study conducted by. Only 6.8% of women with breast can cer reported receiving psychological support[15].The mean and SD of social support for women with cancer was 73.52 ± 13.22 . The results of this study are not consistent with and unsupport ed by research by **Jadidi A, Ameri F**. The mean and standard deviation of social support scores for women with cancer were 39.35 ± 9.51.[17]A significant equation was found (F16.99 = 4.5, R2 = 0.46, P = 0.000). Social support and other wellbeing predi ct mental health in women with breast cancer. Depression is th e strongest predictor of poor mental health in women with brea st cancer. Results of this study **Mahlaq, S., Lahlou, L., Ramm ouz, I**. Depression (β=2.26, 95% CI: 0.59, 3.93, p. = 0.008) wa s a negative predictor of psychological distress in women with breast cancer.[18].

Limitations of the Study:

This study is one of the first to examine factors affecting the ps ychological well-
being of women with breast cancer. Other cultural and clinical factors were also included to find the relationship between depr ession, social support, and the Ryff Mental Health Scale in wo men with breast cancer. Some psychological factors, such as w ork environment and relationships, may be included to determi ne the impact on the health of women with breast cancer.

Conclusion and Recommendation:

The findings showed that women with breast cancer (51%) wer e in good health, 48% were in good mental health, and 1% wer e in good health. (55%) had clinically significant depression, (4 5%) had mild depression or no clinically significant depression . 79% of women with breast cancer received social support, wh ile 21% received moderate support. Multiple regression analysi

s was used to evaluate the impact of health on women with bre ast cancer and a significant correlation was found (F16,99 = 4.5 , R2 = 0.46, P = 0.000). Social support and other wellbeing pre dict mental health in women with breast cancer. Depression wa s the strongest predictor of negative mental health in women wi th breast cancer (β=0.170, P<0.001). Research shows that inter ventions can help improve the psychological wellbeing of wom en with breast cancer. As mental health improves, health strate gies can be used to improve the health of women with breast ca ncer and thereby improve the health of women with breast canc er.

References:

1. *Hemalatha. Effectiveness of Structured Teaching Programme on Breast Cancer & its Prevention for Pre-University Adolescent Girls International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064 Index Copernicus Value (2015): 78.96 | Impact Factor (2015): 6.391*
2. *Shadap A, Pais M, Prabhu A. A descriptive study to assess the knowledge on breast cancer and utilization of mammogram among women in selected villages of Udupi District, Karnataka. Nitte University Journal of Health Science. NUJHS Vol. 4, No.4, 2014, ISSN 2249-7110.*
3. *Sharma P, Dillu R. Study to Assess the Knowledge and Attitude about Breast Cancer and Breast Self-Examination among Women of 20-50 Years of Age in a Selected Hospital of Haryana. International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064 Index Copernicus Value (2015): 78.96 | Impact Factor (2015): 6.391*
4. *Incidence of cancer was higher among women in 2022 in Karnataka, with breast cancer contributing 29.5%. February 03, 2023 09:39 pm | Updated 10:00 pm IST – Bengaluru. Available from URL: https://www.thehindu.com/news/national/karnataka/incidence-of-cancer-was-higher-among-women-in-2022-in-karnataka-with-breast-cancer-contributing-295/article66467731.ece*
5. *İzci F, İlgün AS, Fındıklı E, Özmen V. Psychiatric Symptoms and Psychosocial Problems in Patients with Breast Cancer. J Breast Health. 2016 Jul 1;12(3):94-101. doi: 10.5152/tjbh.2016.3041. PMID: 28331743; PMCID: PMC5351486.*
6. *Sofi, Nighat Yaseen; Jain, Monika; Kapil, Umesh1; Yadav, Chander Prakash2. Epidemiological characteristics of breast cancer patients attending a tertiary health-care institute in the National Capital Territory of India. Journal of Cancer Research and Therapeutics 15(5):p 1087-1091, Jul–Sep 2019. | DOI: 10.4103/jcrt.JCRT_868_16*
7. *Sarkar S, Ghosh D, Mahata S, Sahoo PK, Roy A, Vernekar M, Datta K, Mandal S, Nasare VD. Sociodemographic factors and clinical presentation of women attending Cancer Detection Centre, Kolkata for breast examination. J Clin Transl Res. 2020 Mar 19;5(3):132-139. PMID: 32617427; PMCID: PMC7326264.*
8. *Olarewaju SO, Oyekunle EO, Bamiro AO. Effect of Sociodemographic Variables on Patient and Diagnostic Delay of Breast Cancer at the Foremost Health Care Institution in Nigeria. J Glob Oncol. 2019 Jul;5:1-8. doi: 10.1200/JGO.19.00108. PMID: 31348736; PMCID: PMC6690652.*
9. *Chen S, Liu Y, Fong DYT, Zhou J, Chen H, Wan C. Health-related quality of life and its influencing factors in patients with breast cancer based on the scale QLICP-BR. Sci Rep. 2023 Sep 13;13(1):15176. doi: 10.1038/s41598-023-41809-8. PMID: 37704676; PMCID: PMC10499782.*
10. *Ali R, Draman N, Mohd Yusoff SS, Norsa'adah B. Self-Efficacy for Coping with Breast Cancer in North-Eastern State of Peninsular Malaysia. Asian Pac J Cancer Prev. 2020 Oct 1;21(10):2971-2978. doi: 10.31557/APJCP.2020.21.10.2971. PMID: 33112556; PMCID: PMC7798160.*
11. *Mansha M, Saleem M, Wasim M, Tariq M. Prevalence of Known Risk Factors in Women Diagnosed with Breast Cancer at Inmol Hospital, Lahore, Punjab. Asian Pac J Cancer Prev. 2016;17(2):563-8. doi: 10.7314/apjcp.2016.17.2.563. PMID: 26925644.*
12. *Almeida M B, R., de Souza V, Felício D SV. Muscle strength is associated with fracture risk obtained by fracture risk assessment tool (FRAX) in women with breast cancer. BMC Cancer 22, 1115 (2022). https://doi.org/10.1186/s12885-022-10203-4*
13. *Deledda G, Poli S, Giansante M, Zamboni M, Turazza M, Gori S. Volume 26, Supplement 6, Vi124, October 2015. Available from URL: https://doi.org/10.1093/annonc/mdv347.06*
14. *Devarakonda SK, Timman R, Bouvy PF, Oemrawsingh A, Apon I, Mureau MAM, Koppert LB, Kranenburg LW. Trends in emotional functioning and psychosocial wellbeing in breast cancer survivors: a prospective cohort study using patient-reported outcome measures. BMC Womens Health. 2023 Mar 30;23(1):153. doi: 10.1186/s12905-023-02243-0. PMID: 36997924; PMCID: PMC10064532.*
15. *Abu-Helalah M, Mustafa H, Alshraideh H, Alsuhail AI, A Almousily O, Al-Abdallah R, Al Shehri A, Al Qarni AA, Al Bukhari W. Quality of Life and Psychological Wellbeing of Breast Cancer Survivors in the Kingdom of Saudi Arabia. Asian Pac J Cancer Prev. 2022 Jul 1;23(7):2291-2297. doi: 10.31557/APJCP.2022.23.7.2291. PMID: 35901334; PMCID: PMC9727347.*
16. *Dewan, Mashael F, Lyons, Karen S, MinKyoung, Hassouneh, Dena. Factors associated with Depression in Breast Cancer patients in Saudi Arabia. Cancer Nursing 45(2): p E524-E530, 3/4 2022. | DOI: 10.1097/NCC.0000000000000996*
17. *Jadidi A, Ameri F. Social Support and Meaning of Life in Women with Breast Cancer. Ethiop J Health Sci. 2022 Jul;32(4):709-714. doi: 10.4314/ejhs.v32i4.6. PMID: 35950056; PMCID: PMC9341025.*
18. *Mahlaq, S., Lahlou, L., Rammouz, I. et al. Factors associated with psychological burden of breast cancer in women in Morocco: cross-sectional study. BMC Women's Health 23, 590 (2023). https://doi.org/10.1186/s12905-023-02769-3*